AUTHOR INDEX

Aaronson, S. 164, 174
Aass, N. 218, 224
Abate, C. 203, 205–207
Abboud, H. E. 177, 189, 190
Abelson, H. T. 18, 25, 30
Abrams, R. 227, 238
Adamik, R. 36, 55
Adams, J. B. 47, 56
Adashi, E. Y. 151, 156, 159
Adibi, S. A. 279, 281, 284
Ailhaud, G. 259, 263
Akerboom, T. P. M. 113, 115
Akerman, M. 227, 239
Akiyama, T. 163, 174
Al-Tai, A. H. 313, 315, 325
Alesenko, A. V. 74, 82, 86, 87
Alexander, R. W. 181, 191
Alexander-Bridges, M. 149–159
Aligue, R. 98, 103
Alkon, D. L. 169, 175
Allison, D. S. 316, 326
Allsop, J. 314, 315, 325
Alonso, T. 168, 175
Amamoto, T. Y. 163, 174
Ames, B. N. 180, 191
Amsterdam, A. 178, 191
Anderson, R. G. W. 3, 11, 12, 14, 15
Anderson, W. B. 75, 90, 96, 102
Andreone, T. L. 138, 147
Angel, P. 151, 154, 159, 195, 206, 207
Angeles, S. M. 11, 14, 17, 26, 30
Anthes, J. C. 177, 178, 184, 190
Antonucci, A. 74, 75, 77, 79, 80, 85, 86, 88, 89, 102
Aoki, T. 218, 224
Appelgren, L. E. 107, 114
Arcot, S. S. 244, 253
Arduini, A. 290, 303
Argan, C. 316, 326
Argetsinger, L. S. 259, 263
Arias, I. M. 113, 116
Arnheim, N. 198, 208
Asanagi, M. 216, 222
Aschauer, H. 121, 122, 128
Ashton, D. S. 36, 54
Atlan, I. H. 170, 175
August, J. 178–184, 191
Austen, K. F. 108, 115
Avery, T. L. 17, 29
Awad, A. B. 74, 88
Awan, M. 285–306
Azhar, S. 75, 89

Babenko, N. A. 74, 87
Babizhaev, M. A. 41, 55
Bachs, O. 98, 103
Bacon, P. E. 227, 239
Bailey, B. D. 17, 28, 29
Bailey, M. J. 218, 224
Baker, L. R. I. 322, 327
Baldassare, J. J. 189, 192
Baldwin, S. W. 24, 31
Balint, Z. 74, 82, 87
Ball, H. A. 107, 110, 112, 115
Ballard, F. J. 149, 158
Barbacid, M. 163, 168, 174
Barber, A. J. 45, 55
Barker, J. L. 123, 128
Barker, P. J. 75, 89, 96, 98, 103
Barker, R. 144, 148
Barker, W. C. 123, 128
Barlogie, B. 218, 224
Barlowe, C. K. 31
Barnabei, O. 74, 75, 82, 85, 87–89, 91–103
Barnard, R. 258, 263
Barrueco, J. R. 17, 21, 30
Barthalmus, G. T. 118, 127
Baserga, R. 243, 253
Bass, B. L. 196, 207
Basset, P. 50, 56
Basu, A. 196, 203, 208
Bates, J. N. 36, 55
Baumert, T. 107, 112, 114
Bax, A. 121, 123, 127
Baylin, S. B. 218, 224
Bazan, J. F. 258, 263
Beardsley, G. P. 24, 31
Beck, G. 241–254
Beckman, B. S. 75, 90
Beebe, S. J. 140, 147
Beeler, T. 124, 129
Beggs, M. 267, 280, 283
Bekesi, J. G. 218, 223
Bell, R. M. 179, 180, 183, 191
Bello, J. B. 241, 252
Beltz, W. R. 18, 25, 30
Belushkina, N. N. 36, 43, 55
Bendayan, M. 77, 79, 80, 86

Bending, M. R. 311, 324
Benjamin, C. W. 168, 175
Beranek, J. T. 218, 223
Berezney, R. 74, 75, 87, 89, 96, 103
Berg, P. 227, 236, 239
Berger, S. L. 253
Berger, S. M. 218, 223
Berger, U. 107–116
Berggren, P. O. 96, 102
Bernal, S. 218, 224
Berridge, M. J. 73, 86, 91, 99–101, 103, 165, 175, 177, 190
Berry, S. A. 258, 262
Bertagnolo, V. 75, 76, 82, 84, 86, 87, 89, 92, 102
Bertino, J. R. 17, 29
Besserer, J. A. 23, 30
Bevins, C. L. 118, 126, 127, 129
Bezard, J. 298, 306
Bhushan, A. 24, 31
Bianchi, A. 292, 304
Bichler, I. 163–176
Bieber, L. L. 285, 294, 297, 301, 305
Billah, M. M. 177, 178, 180, 184, 190, 191
Billi, A. M. 74–76, 82, 84, 86–89
Bird, M. I. 287, 289, 290, 294, 295, 298, 299, 301, 303–305
Bishop, J. A. 24, 31
Bishop, W. R. 177–192
Blackhart, B. D. 242, 253
Blackshear, P. J. 149, 151, 154, 158
Blair, O. C. 62, 63, 68
Blakeley, D. M. 100, 103, 178, 191
Blakley, R. L. 14, 17, 28, 29
Blazyk, J. 124, 128
Bleehen, N. M. 218, 224
Bloom, R. J. 309, 325
Bocckino, S. B. 177, 189, 190
Bogden, A. E. 211, 217, 221, 222
Bogen, P. D. 283
Bohmann, D. 195, 208
Bohme, E. 35, 36, 42, 47, 54, 55
Boldyrev, A. A. 41, 55
Bonnefont, J.-P. 291, 304
Bonora, B. 74, 88
Bontemps, F. 134, 145, 147
Boon, M. R. 288, 289, 299, 302
Boritzki, T. J. 58, 67, 68
Born, G. V. R. 37, 55
Bos, T. J. 195, 208
Bourne, H. R. 163, 168, 174
Bouvard, I. 246, 253
Boyd, T. A. 281, 284
Boyenval, U. 76, 86
Boyer, P. 147
Boykov, P. Y. 74, 87
Braakhuis, B. J. M. 18, 30
Brabant, M. 246, 254
Bradford, A. P. 269, 283
Bradley, M. O. 195, 208
Bradshaw, H. D. 242, 252
Brady, L. J. 288, 289, 294, 298, 302–304
Brady, P. S. 289, 294, 303, 304
Brandwein, H. J. 37, 55
Bray, G. 159
Bremer, J. 288, 289, 298, 302, 306
Brereton, H. D. 211, 217, 221, 222
Breur, K. 217, 218, 223
Brixer, D. I. 17, 29
Broom, A. D. 17, 29
Brosemer, R. W. 309, 325
Brosnan, J. T. 292, 304
Brown, A. B. 187, 192
Brown, J. H. 124, 129, 178, 181, 190
Brown, K. D. 94, 100, 102, 103, 178, 191
Bruchovsky, N. 220, 224
Brunton, G. F. 217, 218, 223
Bryant, P. J. 220, 224
Buc, J. 134, 147
Buckley, A. R. 75, 89, 96, 102
Buckley, M. G. 290, 304
Bugaisky, G. E. 285, 301
Bullock, P. 256, 262
Bundesen, P. G. 258, 263
Bunin, A. Y. 41, 55
Burckhardt, B. C. 170, 175
Burgschwaiger, S. 122, 128
Burlakova, E. B. 74, 82, 86
Burton, A. C. 213, 222
Busbee, D. 100, 103
Busse, R. 36, 42, 47, 54, 55
Busygina, O. G. 37, 41, 42, 47, 52, 53, 55, 56
Butte, J. 75, 89

Cabot, M. C. 178, 191
Calne, R. Y. 309, 322, 324, 327
Calvert, A. H. 24, 31
Cantin, E. M. 196, 207
Cantley, L. 163, 174
Capitani, S. 73–90, 92, 96, 99, 101–103
Carafoli, E. 98, 103
Caras, I. W. 227, 236, 239
Carini, C. 75, 89, 96, 103
Carmelli, E. 74, 88
Carnie, J. A. 313, 315, 325
Carpenter, C. A. 287–291, 294, 295, 298, 299, 301–305
Carpenter, G. 187, 192
Carter, G. L. 227–240
Carter, S. M. 218, 223
Carter-Su, C. 259, 263

Casanello–Ertl, D. 279, 284
Casimir, C. 243, 253
Castro, J. 289, 299, 303
Cataldi, A. 75, 89, 90
Catalioto, R. M. 259, 263
Catieru, J. 52, 56
Cave, C. F. 74, 76, 86
Cech, T. R. 196, 207
Cei, J. M. 117, 127
Cernohorsky, I. 74, 87
Chabner, B. A. 17, 29
Chahinian, A. P. 216, 218, 219, 220, 223
Chahinian, P. 217, 223
Chahwala, S. B. 163, 174
Chalkley, R. 74, 88, 260, 263
Chang, C.-H. 227, 239
Chang, P. S. 196, 207
Chapmann, D. 74, 87
Charbit, A. 217, 218, 223
Chayen, J. 74, 87
Chen, H.-C. 118, 123, 124, 127, 129
Chen, J. 198, 207
Chen, Z. 246, 254
Cheng, Y.-C. 206, 209, 227, 239
Chida, K. 163, 174
Chirkon, Y. Y. 36, 38, 43, 51, 55, 56
Chiu, R. 151, 154, 159, 195, 206, 207
Chomczynski, P. 228, 239
Chou, P. Y. 327
Chua, B. H. 281, 284
Cinti, D. L. 288, 302
Clark, D. G. 134, 145, 147
Clark, J. B. 287, 290, 301
Clark, M. 181, 191
Clouet, P. 298, 306
Cobb, L. M. 218, 224
Cocco, L. 74–76, 79, 82, 86–103
Coetzee, M. L. 74, 82, 86
Coffey, D. S. 74, 87
Coffino, P. 246, 254
Cohen, D. R. 195, 208
Cole, R. D. 74, 87
Collin, C. 169, 175
Collins, V. P. 217, 218, 223
Colowick, S. P. 133, 146, 147
Colston, M. J. 218, 224
Colwell, J. A. 50, 56
Connor, J. A. 168, 175
Conrad, S. E. 243, 244, 246, 247, 253, 254
Cook, G. A. 288, 289, 294, 298, 299, 302, 303, 305, 306
Cook, K. G. 269, 283
Cooper, P. J. 311, 313, 324, 325
Coppock, D. L. 242, 243, 253
Corbin, J. D. 140, 147
Corchman, R. A. 23, 30
Corin, R. E. 12, 15
Cornell, N. W. 298, 305
Cornish–Bowden, A. 133, 136, 147
Corps, A. N. 75, 90, 93, 94, 97, 100, 102
Corstorphine, C. G. 293, 294, 298, 304, 305
Cory, A. H. 238
Cory, J. G. 227–240
Coulombe, P. A. 77, 79, 80, 86
Coulson, A. R. 242, 252, 270, 283
Courtenay, V. D. 218, 223
Covell, D. 124, 129
Cox, K. A. 294, 305
Cox, W. F. 289, 291, 293, 294, 303, 305
Crabb, D. W. 267, 269, 270, 271, 280, 283
Craven, S. 220, 224
Crippa, M. 121, 128
Cronin, M. J. 259, 263
Crowe, P. D. 75, 89, 96, 102
Cruciani, R. A. 123, 128
Csordás, A. 117, 118, 127
Curran, T. 164, 174, 195, 203, 205–208
Curtin, G. 100, 103
Czajkowski, C. A. 11, 14, 17, 26, 30

Daddona, A. 75, 89
Danner, D. J. 279, 281, 284
Danpure, C. J. 309–311, 313–315, 317–322, 324–327
Davies, D. R. 133–148
Davison, A. M. 74, 87
Dawson, C. M. 134, 147
Dawson, P. J. 218, 224
Day, R. S. 228, 239
De Gunzburg, J. 165, 168, 175
De Pauw, L. 322, 327
De Hertog, R. 258, 263
De Meyts, P. 259, 263
Dean, B. M. 311, 324
Declercq, P. E. 294, 304
DeGraw, J. I. 17, 24, 29
Deiniger, P. L. 242, 244, 252, 253
Delfour, A. 122, 128
Deli, E. 75, 90
Demaugre, F. 291, 304
Dembo, M. 17, 28
Demurov, E. A. 52, 56
Denaro, M. 150–154, 159
Denton, J. E. 218, 224
Denton, R. M. 288, 302
Denzlinger, C. 107, 109, 110, 114, 115
DePamphilis, M. L. 252, 254
DePaoli–Roach, A. A. 276, 284
Der, C. J. 164, 174
Derrick, J. P. 285, 301

DeRubertis, F. 36, 55
Detheux, M. 133–148
Deutsch, P. J. 152, 159
Dexter, P. 267, 269–271, 280, 283
Di Donato, S. 291, 304
Diczfalusy, E. 224
Dieter, R. 149, 151, 154, 158
Distel, R. J. 195, 208
Doll, J. 108, 115
Dollery, C. T. 107, 110, 115
Doppler, W. 163, 164, 174
Dou, Q.-P. 245, 246, 253
Downes, C. P. 91, 101
Downward, J. 165, 168, 175
Drewinko, B. 218, 224
Droz, B. 76, 86
Duclohier, H. 123, 128
Duducgian–Vartavarian, L. 279, 284
Duee, P.-H. 288, 289, 299, 303
Dugast, I. 149–159
Duhring, J. L. 3, 11, 14
Dumoulin, M. 152, 159
Dupin, A. M. 41, 55

Earnardt, J. 74, 88
Eble, J. N. 218, 224
Edelmann, L. 78, 86
Eden, S. 256, 262
Edmundson, A. B. 123, 128, 316, 320, 321, 326
Edwards, M. R. 295, 305
Egan, R. W. 180, 191
Eisinger, A. J. 311, 324
El–Fakahany, E. E. 181, 191
Elchholtz, T. 177, 189, 190
Elford, H. L. 227, 238
Elion, G. B. 68
Ellison, M. 218, 223, 224
Elsas, L. J. 279, 281, 284
Elwood, P. C. 3, 11, 14
Emtage, J. 316, 326
Enberg, B. 257, 258, 262, 263
Endean, R. 117, 127
Endo, M. 163, 174
Eneroth, P. 256, 262
Epand, R. M. 316, 326
Ercolani, L. 149–159
Erikson, S. K. 74, 87
Eriksson, S. 227, 239
Erlich, H. A. 198, 208
Erlinger, S. 170, 175
Erspamer, V. 117, 125, 127
Erusalimsky, J. 171, 175
Espinal, J. 267, 280, 283
Esser, V. 289, 291, 293, 294, 303, 305
Esswein, A. 6, 14
Estensen, R. 42, 55
Esumi, H. 315, 319, 326
Evans, J. L. 292, 304
Evans, R. M. 92, 101
Exton, J. H. 177, 178, 184, 189, 190

Facchini, A. 74, 82, 87, 92, 99, 102
Fahimi, H. D. 107, 111, 112, 115
Falcieri, E. 75, 90, 96, 97, 102
Falck, J. R. 294, 304
Falconi, M. 82, 87
Falconier Espamer, G. 117, 127
Falk, E. 109, 112, 115
Faloona, F. 198, 208
Fan, J. 3–15, 17, 30
Farina, A. R. 195, 209
Farnham, P. J. 244–246, 253, 254
Farr, A. L. 37, 55
Fasman, G. S. 327
Feinstein, M. B. 178, 181, 190
Felaco, M. 74, 88
Feldman, D. R. 178, 191
Feng, Y.-X. 298, 303
Feramisco, J. R. 163, 174, 206, 208
Ferrige, A. G. 36, 54
Fields, A. P. 75, 90, 96, 102
Fieldsteel, A. H. 218, 224
Filsell, O. W. 134, 145, 147
Fiol, C. J. 294, 305
Firshein, W. 74, 88
Fleet, I. R. 94, 100, 102
Fleischer, A. E. 227, 236, 239
Fleischmann, L. F. 163, 174
Flemington, E. K. 244, 253
Flensgrund, R. 79, 86
Fodstad, O. 218, 224
Fojo, A. T. 59, 68
Fornace, A. J. 59, 68, 195, 207
Forsey, R. G. P. 292, 304
Forster, A. C. 196, 207
Fortier, C. 242, 253
Foster, D. W. 285, 287, 289–291, 293–295, 301, 303–305
Fostermann, U. 42, 55
Fourney, R. M. 228, 239
Fox, M. 317, 318, 319, 326
Fox, P. C. 126, 129
Franco, C. T. 17, 29
Franza, B. R. 195, 206, 207, 208
Frappier, L. 227, 239
Freedman, L. S. 218, 224
Freese, M. 227, 238
Frei, E. 18, 25, 30
Friesheim, J. H. 3, 5, 8, 11, 14, 17–31
Freizner Degan, S. J. 318, 326
Frenster, J. H. 74, 88

Fridovich–Keil, J. L. 245, 246, 253
Friedman, S. J. 224
Friedrich, F. 164, 165, 168, 175
Friere, E. 316, 326
Fritsch, E. F. 242, 253
Fritz, I. B. 285, 301
Frohman, L. A. 256, 262
Fry, D. W. 23, 30
Fryer, P. 314, 315, 325
Fugimura, S. 216, 222
Fujii, N. 123, 128
Fuller, R. W. 107, 110, 115
Funakoshi, S. 123, 128
Funato, T. 195–209
Furchgot, R. F. 36, 42, 54

Gable, K. 124, 129
Gahan, P. B. 74, 76, 86, 87
Galanzi, A. 74, 76, 82, 86–88
Galivan, J. 17, 28
Gamble, M. S. 288, 289, 298, 299, 302, 306
Garcia, M. M. 75, 90
Garcia–Garcia, M.-V. 289, 303
Gardner, S. 163, 174
Garland, P. B. 285, 301
Gatmaitan, Z. 113, 116
Gazet, J. C. 218, 224
Gebremedhin, S. 149, 158
Geck, P. 170, 175
Geelen, M. J. H. 288, 303
Gelman, I. 74, 88
Gemzik, B. 256, 262
Gentz, R. 203, 205–207
Gerlach, W. L. 201, 207
Gerok, W. 110, 112, 115
Gershon–Cohen, J. 218, 223
Gerzer, R. 35, 36, 54, 55
Ghadiminejad, I. 285–306
Gibbs, D. A. 309, 311, 324
Gibbs, J. 218, 223
Gibson, B. W. 118, 121, 122, 127
Gibson, R. 267, 269–271, 280, 283
Giere, L. 149–159
Gilbert, F. 218, 224
Gillespie, L. L. 316, 326
Gilman, M. Z. 149, 151, 154, 158
Gilmour, R. S. 74, 75, 79, 82, 86, 87, 89–103
Giovanella, B. C. 204, 206, 207
Giovannini, M. G. 118, 121, 122, 127
Girard, P. R. 75, 89, 96, 103
Girard, J. 289, 299, 303
Glass, D. B. 42, 55
Glover, J. L. 218, 224
Godfrey, P. P. 181, 191
Goldberg, A. D. 42, 55
Goldberg, A. L. 281, 284
Goldberg, N. 52, 56
Goldberg, S. L. 213, 214, 216, 218, 219, 222, 223
Goldman, I. D. 17, 21, 23, 28–31
Goldstein, K. E. 178, 191
Gollakota Rao, L. 241, 252
Gonzales, N. C. 52, 56
Gonzalez, F. J. 255, 262
Goodman, H. M. 259, 263
Goodwin, G. W. 267, 269–271, 280, 283
Gopal, T. V. 206, 207
Gorin, E. 259, 263
Gorman, R. R. 168, 175
Gould, G. 74, 87
Gould, S. J. 315, 326
Goureau, M. F. 74, 87
Grabner, M. 164, 174, 241–254
Graff, E. 52, 56
Granner, D. K. 138, 147, 149, 158
Grantham, B. D. 288, 289, 298, 299, 302, 306
Graven, P. 36, 55
Graves, B. J. 151, 156, 159
Gray, S. R. 294, 305
Green, D. E. 322, 327
Greenbaum, A. L. 287, 302
Greenberg, M. E. 149, 151, 154, 158, 195, 205, 207
Greene, L. A. 149, 151, 154, 158
Greengard, O. 211–224
Greenleaf, A. L. 270, 283
Greger, R. 175
Gregory, J. F. 28
Griendling, K. 181, 191
Griffo, G. 317–319, 326
Grimley, P. M. 75, 90
Groenink, A. 177, 189, 190
Groner, B. 163, 164, 170, 174, 175
Gronowitz, J. S. 241, 252
Gross, M. K. 163, 174, 246, 247, 251, 253, 254
Grossie, B. 218, 224
Groudin, M. 243, 253
Grunicke, H. 163–176
Gruzova, M. N. 74, 88
Gudas, J. M. 242, 243, 246, 253
Guerra, R. 36, 55
Guhlmann, A. 107–116
Gunn, J. M. 149, 158
Gustafsson, J.-Å. 255–263
Guttridge, K. M. 313–315, 325
Guy, H. R. 123, 128
Guzelian, P. S. 257, 262
Guzman, M. 288, 289, 299, 303

Haas, R. 242–244, 252
Habener, J. F. 152, 159
Hachman, H. J. 74, 88
Hacker, M. P. 24, 31, 196, 203, 208
Haddock–Russell, D. 96, 102
Haddox, M. K. 42, 55
Haedicke, K. 195, 207
Hagag, N. 164, 174
Hagberg, B. 241, 252
Hager, J. C. 218, 224
Hagiwara, M. 75, 90
Hagmann, W. 107, 110, 114, 115
Hakozaki, M. 279, 280, 284
Halenda, S. P. 178, 181, 190
Hales, C. N. 134, 147
Hall, A. 163, 168, 174
Hall, L. 59, 68
Hall, T. C. 3, 14
Halushka, P. V. 50, 56
Hamer, D. H. 196, 203, 208
Hamet, P. 34, 54
Hamilton, M. J. 74, 87
Hamilton, T. C. 59, 68
Hammarström, S. 107, 110, 112, 114, 115
Hammer, D. K. 107, 109, 110, 115
Hammerer, M. 164, 165, 168, 175
Hammerman, M. A. 259, 263
Hamon–Benais, C. 317, 318, 319, 326
Han, A. C. 267, 283
Han, J. 197, 203, 204, 206, 308
Hancock, J. F. 163, 174
Hand, A. R. 126, 129
Handa, T. 123, 128
Handel, L. M. 59, 68
Handin, R. I. 50, 56
Hannun, Y. A. 183, 191
Hanson, R. W. 149, 158
Harada, M. 123, 128
Harano, Y. 289, 299, 303
Hardie, D. G. 287, 302
Hargrove, J. L. 236, 240
Harkness, R. A. 63, 68, 69
Harless, M. L. 246, 254
Harper, R. D. 289, 303
Harping, K. M. 17, 19, 29
Harrap, K. R. 24, 31
Harris, R. A. 267–284, 288, 289, 298, 302, 306
Harrison, D. G. 36, 55
Haseloff, J. 201, 207
Hashimoto, T. 289, 299, 303
Haslinger, A. 195, 203, 205, 208
Haspel, H.C. 12, 15
Häussinger, D. 110, 112, 115
Hayakawa, T. 309, 325
Hayashi, Y. 216, 222
Head, J. F. 211–224
Heimberg, M. 289, 299, 303
Heinz, E. 170, 175
Helms, B. 75, 89, 92, 102
Henderson, G. B. 3, 4, 8, 9, 14, 17, 18, 21, 23, 28–30
Henderson, S. D. 218, 224
Hendler, R. W. 123, 124, 128, 129
Henninger, C. 298, 306
Henninghausen, L. 243, 253
Heppel, L. A. 164, 174
Herrlich, P. 151, 154, 159, 195, 206, 207, 208
Hers, H. G. 134, 145, 147
Heslop, J. P. 100, 103
Heyderman, E. 218, 223
Hidaka, H. 75, 90
Hill, B. T. 17, 28
Hirano, T. 259, 263
Hirashima, M. 309, 325
Hirata, Y. 259, 263
Hoag, D. 218, 224
Hoebel, R. 165, 168, 175
Hoeffler, J. P. 152, 159
Hofbauer, R. 242, 243, 247, 252
Hoffman, R. 58, 62–64, 66, 68, 69
Hoffmann, E. K. 169, 175
Hoffmann, W. 121, 128
Hoflacher, J. 164, 165, 170–172, 175
Hofmann, F. 35, 36, 54, 55
Hofmann, J. 163, 174
Hökfelt, T. 256, 262
Holczinger, L. 74, 82, 87
Hollan, S. R. 62, 63, 68
Holland, J. F. 218, 223
Holland, R. 287, 302
Hollander, M. C. 195, 207
Holt, J. T. 206, 207, 208
Holte, S. 108, 115
Homma, Y. 163, 174
Honda, K. 279, 280, 284
Honeyman, T. W. 259, 263
Hooper, S. 227, 238
Hoover, R. G. 149, 158
Hoppel, C. L. 285, 288, 289, 298, 301, 302
Horanyi, M. 62, 63, 68
Horn, G. T. 198, 208
Hornbeck, P. 75, 90
Horvath, S. J. 316, 317, 326
Horwits, P. M. 47, 56
Hoshina, S. 184, 187, 192
Hosken, N. 315, 326
Houghton, J. A. 218, 223
Housey, G. M. 179, 184, 191, 192
Housley, M. D. 163, 174
Hoverath, H. 108, 115
Howard, G. 149, 150, 159

Hsiao, W. L. W. 179, 184, 191, 192
Hsu, J. 113, 116
Huang, C. M. 124, 129, 179, 191
Huang, F. L. 75, 89
Huang, H. P. 187, 192
Huang, K. P. 75, 89, 90
Huang, M. 163, 174
Huber, M. 107–115
Hue, L. 134, 145, 147
Huennekens, F. M. 3–15, 17, 23, 29, 30
Hughes, L. R. 24, 31
Hui, S.-W. 316, 326
Hunt, L. T. 123, 128
Huskisson, N. S. 98, 103
Hyman, A. L. 42, 55

Ignarro, L. J. 35, 36, 42, 47, 54–56
Ikegami, T. 58, 60, 62, 63, 68
Illman, R. J. 288, 299, 303
Imagawa, M. 151, 154, 159, 195, 206, 207
Imbra, R. J. 151, 154, 159, 195, 206, 207
Irino, S. 59, 60, 62, 63, 68, 69
Irvine, R. F. 73, 75, 82, 86, 87, 90, 91, 99, 100, 101, 103, 165, 175, 177, 190
Ishikawa, T. 107–110, 112–115
Israel, L. 217, 223
Ito, M. 243, 246, 247, 253, 254
Iverson, A. J. 292, 304
Iwahashi, K. 182, 191
Iyengar, R. 36, 54

Jackman, A. L. 17, 24, 29, 31
Jackson, R. C. 57, 58, 60, 64, 67, 68, 218, 224
Jackson, V. 74, 88
Jaffer, F. E. 177, 189, 190
Jaggi, R. 163, 164, 170, 174, 175
Jaken, S. 75, 90
Jalink, K. 177, 189, 190
Jameson, J. L. 152, 159
Jansen, G. 5, 14, 17–31
Jansen, J. H. 315, 326
Jansen, P. L. M. 110–113, 115
Jansson, J.-O. 256, 262
Jarmuszewski, M. J. A. 17, 18, 20, 21, 23, 24, 30
Jaskiewicz, J. 267–284
Jaskulski, D. 243, 253
Jayaram, H. N. 58, 62–66, 68, 69
Jedlitschky, G. 107, 110–112, 115
Jefferson, L. S. 281, 284
Jennings, P. R. 309–311, 313–315, 324–326
Jiao, L. 195–209
Jilka, J. M. 273, 284
Johansson, L. 218, 223
Johns, M. L. 298, 305
Johnsen, S. 79, 86
Johnson, D. 256, 262
Johnson, L. F. 241, 252
Johnson, M. D. 184, 179, 184, 191, 192
Johnson, P. F. 151, 156, 159
Johnson, R. M. 259, 263
Johnson, T. M. 149, 150, 159
Jonat, C. 151, 154, 159, 195, 206, 207
Jones, B. S. 267, 283
Jovine, R. 74, 88
Juretic, D. 123, 124, 128, 129

Kabara, J. J. 86
Kachar, B. 123, 128
Kadowitz, P. J. 42, 55
Kahn, E. 164, 165, 168, 175
Kaijser, L. 107, 110, 115
Kainz, M. S. 246, 247, 253, 254
Kaiser, I. 110, 112, 115
Källander, C. F. R. 241, 252
Kallman, R. F. 212, 222
Kamata, N. 163, 174
Kamata, T. 163, 174
Kamen, B. A. 3, 11, 12, 14, 15
Kamimoto, Y. 113, 116
Kan, F. W. K. 77, 80, 86
Kaneko, M. 182, 191
Kaneko, N. 315, 319, 326
Kang, I. 150–154, 159
Kannicht, C. 113–115
Karin, M. 151, 154, 159, 195, 203, 205–208
Kartha, S. 149, 158
Kase, H. 182, 191
Kashani-Sabet, M. 195–209
Kashfi, K. 288, 289, 302
Kashiwagi, A. 289, 299, 303
Kathmann, I. 5, 14, 17, 18, 20, 21, 23–25, 29, 30
Kato, H. 121, 122, 128
Kato, M. 163, 174
Kato, R. 257, 262
Kato, Y. 182, 191
Kauffman, M. G. 248, 250, 254
Kaufmann, S. 75, 90
Kawasaki, Y. 310, 324
Kaziro, Y. 163, 174
Kedar, P. S. 206, 208
Kellems, R. E. 246, 254
Keller, S. A. 149, 150, 159
Keller, G.-A. 315, 326
Kelley, S. L. 196, 203, 208
Kelliher, M. G. 293, 294, 304
Kelly, J. L. 270, 283

Kelly, T. J. 248, 250, 254
Kempton, R. J. 17, 19, 29
Keppler, D. 107–116
Kerbey, A. L. 267, 283
Kerner, J. 294, 297, 305
Kerns, A. 267, 283
Kerr, L. D. 206, 208
Kessel, D. 3, 14
Kesselberg, M. 108, 115
Kestlegers, J. M. 258, 263
Keyes, S. R. 288, 302
Kiani, A. 164, 175
Kido, R. 310, 313, 314, 324, 325
Kikkawa, U. 177, 190
Kim, U.-M. 187, 192
Kimmel, A. R. 253
King, K. L. 259, 263
Kirschmeier, P. 179, 184, 191
Kirschner, P. A. 213, 214, 216, 218, 222
Kishimoto, A. 177, 190
Kishimoto, T. 259, 263
Kiss, Z. 75, 90
Kizaki, H. 58, 68
Klein, T. E. 19, 30
Klickstein, H. S. 218, 223
Kling, K. 218, 224
Klünemann, C. 107–116
Knauss, T. C. 177, 189, 190
Knight, G. B. 242, 243, 253
Knight, R. D. 62, 63, 68
Knöfler, M. 242–244, 252
Knowles, R. G. 36, 55
Knox, W. E. 214, 222
Koch, J. 309, 324
Kochi, H. 279, 280, 284
Kohl, C. 289, 299, 303
Koike, M. 309, 325
Kojima, H. 289, 299, 303
Kolodziej, M. P. 288, 294, 295, 296, 298–300, 302, 304, 306
Koloskov, Y. B. 52, 56
Kong, X. F. 149–159
Koontz, J. 149, 151, 154, 158
Kornberg, A. 74, 88
Kote, Z. 62, 63, 68
Kraft, A. S. 96, 102
Krasilnikov, V. A. 74, 87
Krauss, K. 107–116
Kraynak, A. R. 195, 208
Krebs, E. G. 147, 283
Kreil, G. 121, 122, 128
Kremmer, T. 62, 63, 68
Krishan, A. 229, 240
Kübler, W. K. 108, 115
Kuchler, K. 122, 128
Kuefner, U. 6, 14
Kuehl, F. A. 42, 55
Kuehl, M. 17, 29
Kumar, H. P. 4, 14, 17, 18, 29
Kung, H. F. 163, 164, 174
Kuniyoshi, J. 258, 263
Kunst, M. 113, 115
Kuntz, M. J. 267, 269–271, 280, 283
Kuo, J. F. 75, 90, 96, 89, 103
Kuroiwa, N. 216, 222
Kurok, T. 163, 174
Kurz, D. 109, 112, 115
Kurz, G. 113–115
Kuwajima, M. 289, 293, 294, 303, 304

Labourdette, G. 75, 89
Lacal, J. C. 164, 174
Lacey, S. W. 3, 11, 14
Lacour, L. F. 74, 87
Ladne, P. A. 196, 207
Laemmli, U. K. 19, 30
Lai, M.-H. T. 241, 252
Lai, W. S. 181, 191
Laird, A. K. 211, 212, 216, 217, 222, 223
Lam, B. K. 108, 115
Lamb, N. J. 206, 208
Landschulz, W. H. 151, 156, 159
Lang, A. 74, 79, 86, 92, 102
Lang, F. 163–176
Langer, T. 279, 284
Lapis, E. 58, 64, 66, 68, 69
Lassegue, B. 181, 191
Lauret, E. 243, 253
Lazarow, P. B. 322, 326
Lazarus, H. 18, 25, 30
Lazo, J. S. 196, 203, 208
Le Bars, D. 108, 115
Le Gros Clark, W. E. 222
Leach, K. L. 75, 90
Leaf, C. D. 36, 54
Leatherman, G. F. 285, 289, 301
Ledig, M. 74, 87
Ledwith, B. J. 195, 208
Lee, S. Y. 177, 190
Lee, W. 195, 203, 205, 208
Legraverend, C. 255–263
Lehman, I. R. 270, 283
Lehmann, W. D. 107, 111, 112, 115
Leier, I. 107–116
Lenzen, S. 133, 147
Leong, L. 195, 207
Lesser, B. 220, 224
Letcher, A. J. 75, 82, 87, 91, 101
Levens, D. 195, 209
Levin, W. 257, 262
Levy, R. I. 279, 284
Levy-Wilson, B. 242, 253
Levya, A. 63, 69

Lewickii, J. A. 37, 55
Lewis, D. L. 123, 128
Lewis, J. A. 243, 246, 253
Lewis, L. A. 244, 246, 253
Lezius, A. G. 74, 88
Li, D. 257, 262
Liao, S. T. 289, 291, 293, 294, 303
Lichtenstein, N. S. 17, 28
Liddle, C. 255–263
Lieberman, H. B. 242–244, 247, 253
Lieberman, I. 227, 238
Lien, E. J. 227, 236, 239
Lilly, K. 285, 301
Lin, P.-F. 242–244, 247, 253
Lin, J. C. 152, 159
Linden, C.-J. 218, 223
Ling, N. 195, 207
Lipson, K. E. 243, 253
Liscovitch, M. 178, 191
Lisio, R. 75, 89, 90
Little, C. 79, 86
Littlewood, C. J. 178, 191
Liu, L. F. 204, 206, 207
Lloyd, A. C. 291, 294, 304
Loeffler, R. K. 217, 218, 223
Loferer, H. 164, 174
Loginov, A. S. 74, 87
Lohrmann, U. 6, 14
Lomanto, M. 152, 159
Londono, I. 79, 86
Long, C. S. 290, 291, 294, 303
Loomis, C. R. 179, 180, 183, 191
Lorenz, W. J. 108, 115
Lowry, O. H. 37, 55
Lowy, D. R. 169, 175, 206, 208
Lu, Y. 195, 197, 198, 203, 204, 206–208
Lubon, H. 243, 253
Lucas, D. L. 62, 63, 68
Lucey, M. R. 322, 327
Lucka, L. 113–115
Lui, M. S. 58, 63, 68, 69, 218, 224
Luk, D. 203, 205–207
Lumb, M. J. 317–319, 326
Lund, H. 296, 297, 305
Luthra, S. K. 108, 115
Luu Duc, C. 108, 115

Ma, J. X. 198, 207
Macara, I. G. 163, 174
Macgeoch, C. 256, 262
Machovich, R. 214, 216, 222
Macias, E. A. 124, 128
Macleod, J. N. 256, 262
Macleod, S. M. 262
Maclouf, J. 107, 110, 112, 115
Macphee, C. H. 91, 101
Maes, M. 258, 263
Maggio, J. E. 118, 121, 122, 127
Magnuson, M. A. 134, 138, 147, 149, 158
Makarayeva, E. D. 74, 87
Malaise, E. P. 217, 218, 223
Malaisse–Lagae, F. 146, 148
Malaisse, W. J. 146, 148
Maltby, N. H. 107, 110, 115
Malviya, A. N. 50, 56, 75, 89
Maly, K. 163–176
Manam, S. 195, 208
Mancinelli, G. 290, 303
Mandel, P. 74, 87
Manganiello, V. 36, 55
Mangini, L. 18, 25, 30
Maniatis, T. 242, 253
Mannaerts, G. P. 285, 301
Mansell, M. A. 309, 322, 324, 327
Manzoli, F. A. 73–103
Manzoli, L. 75, 89, 90, 93, 96, 97, 100, 102
Manzoni, M. 92, 102
Maquedano, A. 289, 299, 303
Maraldi, N. M. 73–90, 92, 99, 101, 102
Marchington, D. R. 267, 283
Marinelli, F. 74, 88
Marion, D. 121, 123, 127
Marletta, M. A. 36, 54
Marmiroli, S. 75, 89, 96, 103
Marquardt, H. 3, 11, 14
Marshall, C. J. 163, 174
Martelli, A. M. 74, 75, 77, 79, 80, 82, 85–103
Martin, B. 118, 123, 127
Martin, B. R. 288, 302
Martin, D. W. 227, 236, 239
Martin, T. W. 178, 191
Martini, G. 118, 127
Marvizon, J. C. 168, 175
Masahiko, H. 259, 263
Masmoudi, A. 75, 89
Matherly, L. H. 11, 14, 17, 21, 26, 28, 29, 30, 31
Mathews, L. S. 258, 263
Matkovich, D. A. 243, 246, 253
Matrisian, L. M. 206, 208
Matschinsky, F. M. 133, 146, 147, 148
Matsuda, T. 259, 263
Matsuda, Y. 182, 191
Matsumoto, M. 236, 240
Matsuzaki, K. 123, 128
Mattern, J. 218, 224
Matteucci, A. 74, 75, 88, 89
May, W. S. 75, 90
Mayatepek, E. 107–116
Mayes, P. A. 145, 148
Mayorga, O. L. 316, 326

Mazzanti, G. 117, 127
Mazzei, G. J. 75, 89, 96, 103
Mazzoni, M. 75, 82, 84, 87, 89, 92, 96, 102, 103
Mazzotti, G. 73–90
McAlinden, T. P. 17–31
McCarthy, B. J. 242, 253
McCormick, F. 163, 168, 174
McElwain, T. J. 218, 223
McGarry, J. D. 285, 287, 289–291, 293–295, 301, 303–305
McKay, I. A. 163, 174
McKenna, P. G. 251, 254
McKnight, S. L. 151, 156, 159
McNally, J. 181, 191
McPhaul, M. J. 294, 305
McRoberts, J. A. 170, 175
Means, A. L. 244, 245, 246, 253, 254
Medawar, P. B. 211, 222
Meglasson, M. D. 133, 147
Mehmet, H. 171, 175
Meisler, M. H. 149, 150, 159
Melchiorri, P. 117, 125, 127
Meldolesi, J. 99, 103
Mellion, B. T. 42, 55
Melmed, S. 149, 158
Merion, R. M. 322, 327
Merrill, A. H. 183, 191
Merrill, G. F. 246, 247, 251, 253, 254
Mersel, H. 75, 89
Meunier, J.-C. 134, 147
Meusburger, H. 163, 174
Meyer, J. A. 217, 218, 223
Meyer, M. 163–176
Michl, H. 117, 118, 127
Middleton, R. J. 134, 147
Mills, B. 171, 175
Mills, J. 218, 224
Mills, S. E. 290, 291, 294, 295, 303, 304
Milner, T. A. 99, 103
Minatogawa, Y. 310, 313, 314, 324, 325
Mincada, S. 36, 54
Mines, L. S. 5, 8, 14, 17, 29
Mini, E. 17, 29
Minor, R. L. 36, 55
Minot, C. S. 211, 220, 222
Miroshnichenko, V. P. 37, 41, 52, 53, 55, 56
Miscia, S. 74, 75, 88, 89, 90
Mitchell, G. 291, 304
Miyachi, H. 195, 198, 200, 205, 207, 208
Miyajima, K. 123, 128
Miyakoski, J. 228, 239
Moccio, D. M. 20, 30
Mode, A. 255–263
Modest, E. J. 18, 25, 30
Modrzakowski, M. C. 124, 128
Molle, G. 123, 128
Moncada, S. 36, 47, 54–56
Monks, A. 59, 68
Montejano, Y. 6, 14
Montgomery, J. 227, 236, 239
Moolenaar, W. H. 177, 189, 190
Moore, C. H. 118, 121, 122, 127
Moore, E. C. 227, 238
Moore, K. 107, 110, 115
Moore, K. P. 107, 110, 112, 115
Mor, A. 122, 128
Moran, R. G. 24, 31
Moreira, J. E. 126, 129
Morell, J. L. 124, 129
Morgan, E. T. 256, 262
Morgan, H. E. 281, 284
Morgan, R. O. 168, 175
Morgan, S. H. 311, 322, 324, 327
Mori, T. 279, 280, 284
Morimoto, M. 182, 191
Morita, T. 216, 222
Moriyama, Y. 216, 222
Moroson, B. A. 17, 24, 29, 31
Morris, C. 171, 175
Morris, H. P. 58, 60, 67, 68, 74, 82, 86, 227, 238
Morrissey, J. J. 256, 262
Moulton, A. D. 206, 207
Muchmore, J. H. 74, 88
Muellener, D. 164, 170, 175
Muench, A. J. 241, 252
Mulcahy, L. S. 163, 174
Müller–Lorensen, B. 74, 88
Müller, J. 107–116
Müller, M. 107–116
Mullis, K. B. 198, 208
Müllner, E. 241–243, 247, 252
Mulsch, A. 36, 42, 47, 54, 55
Munday, L. A. 287, 290, 301
Munro, J. B. 227, 239
Munson, P. L. 224
Murad, F. 37, 55
Murakata, C. 182, 191
Murayama, N. 257, 262
Murayama, Y. 58, 68
Murphy, J. P. 179, 184, 191
Murphy, R. C. 107, 110, 112, 115
Murthy, M. S. R. 292–295, 304
Myers, M. 316, 326
Myers, P. M. 36, 55

Nagai, K. 41, 55
Nagai, M. 57–69
Nagata, T. 75, 90
Nakafuku, M. 163, 174
Nakamura, H. 57–69

Nakanishi, S. 182, 191
Nakatani, T. 310, 324
Nanaumi, N. 267–284
Nanberg, E. 171, 175
Napier, M. A. 259, 263
Narayanaswami, V. 113, 115
Nasrin, N. 149–159
Natsumeda, Y. 57–69
Nebert, D. W. 255, 262
Neet, K. E. 134, 147
Negrel, R. 259, 263
Neri, L. M. 74, 75, 82, 84, 87, 88, 90, 93, 97, 98, 102, 103
Neufeld, E. F. 319, 326
Neumann, K. 78, 86
Neville, A. 218, 223
Newell, D. R. 17, 24, 29, 31
Newman, E. M. 206, 208
Ngeyen–Hoang, N. 291, 304
Nicholas, A. W. 204, 206, 207
Nichols, J. R. 52, 56
Nichols, W. W. 195, 208
Nicklen, S. 242, 253, 270, 283
Nicol, S. E. 42, 55
Nicolas, P. 122, 128
Nicolini, C. 88
Nicotera, P. 96, 102
Niedel, J. E. 179, 180, 191
Nienhuis, A. W. 206, 207
Nikolayenko, N. S. 74, 88
Nilsson, T. 96, 102
Nishizuka, Y. 91, 97, 101, 177, 190
Nocito, V. 322, 327
Noguchi, T. 313, 314, 325
Nomoto, H. 182, 191
Nordlund, A.-C. 292, 304
Norman, J. 100, 103
Norstedt, G. 256, 258, 262, 263
Norton, L. 211, 217, 221, 222
Nose, K. 163, 174
Novello, F. 74, 88
Nutkins, J. C. 118, 121, 127

O'Brian, C. A. 179, 184, 191
O'Connor, B. M. 24, 31
O'Fallon, J. V. 309, 325
Oberdorfer, F. 107, 108, 110, 115
Oberhuber, H. 163–176
Ognibene, A. 74, 75, 82, 87, 88, 90, 92–95, 101, 102
Ogris, E. 242, 244, 245, 253
Ohlstein, E. H. 42, 55
Ohnuma, T. 218, 223
Ohwada, H. 216, 222
Okai, K. 313, 325
Okey, A. B. 262
Okuno, E. 310, 313, 314, 324, 325
Olah, E. 58, 59, 62–64, 68, 69
Oliverio, V. T. 17, 28
Olson, R. E. 224
Ono, K. 279, 280, 284
Ontko, D. A. 298, 305
Oota, Y. 314, 325
Opperdoes, F. R. 322, 327
Orellana, S. 178, 181, 190
Ormstad, K. 110, 112, 115
Örning, L. 107, 110, 112, 115
Orrenius, S. 96, 102, 110, 112, 115
Osborn, L. 150, 159
Ostertag, H. 107, 108, 110, 115
Otnaess, A. B. 79, 86
Otter, G. M. 17, 24, 29
Ove, P. 74, 82, 86
Owen, W. F. 108, 115
Ozawa, T. 268, 283
Ozols, R. F. 59, 68

Pachter, J. A. 177–192
Pai, J.-K. 177–192
Pain, J. 26, 31
Painson, J. C. 256, 262
Palacios, M. 36, 55
Palmer, R. M. J. 36, 47, 54, 55, 56
Pande, S. V. 292–295, 304
Panet, R. 164, 170, 172, 175, 176
Pantaz, E. A. 82, 87
Panten, U. 133, 147
Papa, S. 74, 82, 87, 88, 92, 102
Papageorge, A. G. 169, 175
Pardee, A. B. 203, 208, 242, 243, 245, 246, 253
Pardridge, W. M. 279, 284
Parfenov, V. N. 74, 88
Paris, S. 172, 176
Parkinson, A. 256, 262
Parries, G. 165, 168, 175
Parthé, S. 110, 112, 115
Pascal, M. 298, 306
Passamani, E. 227, 238
Patel, H. 267, 280, 283
Paterson, M. C. 228, 239
Paul, H. S. 279, 281, 284
Paul, W. E. 75, 90
Paulik, E. 62–66, 68, 69
Paulson, D. J. 298, 306
Paxton, R. 267, 268, 276, 279, 281, 283, 284
Peckman, M. J. 218, 223, 224
PeGorier, J.-P. 288, 289, 299, 303
Pehl, A. 218, 224
Pellet, A. 291, 304
Penketh, R. J. 313, 325

Pessin, M. S. 189, 192
Petit, G. R. 75, 90
Petrin, J. M. 178–184, 191
Pettit, F. H. 273–277, 283
Pezeshki, B. 203, 204, 206, 208
Pfeiffer, B. 170, 175
Philippe, J. 149, 158
Phillips, V. M. 31
Picano, M. F. 28
Pickard, R. G. 218, 224
Pietrzyk, C. 170, 175
Pike, V. W. 108, 115
Pilkis, S. J. 138, 147
Pillwein, K. 63, 69
Pincus, R. 17, 21, 30
Pinedo, H. M. 63, 69
Pinto da Silva, P. 78, 86
Piper, J. R. 17, 24, 29
Pöckl, E. 241, 252
Polak, J. M. 86
Ponta, H. 195, 206, 208
Pontecorvo, E. G. 42, 55
Pope, L. E. 17, 30
Popov, K. M. 267–284
Poser, R. E. 17, 21, 30
Potmesil, M. 204, 206, 207
Poulter, L. 118, 121, 122, 127
Poussegur, J. 172, 176
Povey, S. 317–319, 326
Powell, S. M. 267, 283
Powell, T. 287, 301
Powers, E. A. 75, 90
Prager, D. 149, 158
Prajda, N. 57–59, 64, 66–69, 218, 224
Prasad, K. M. R. 17–31
Preiss, J. 179, 180, 191
Preist, D. G. 206, 208
Previati, M. 75, 82, 84, 87, 89, 92, 102
Price, E. M. 5, 8, 14, 17, 18, 19, 25–30
Printz, R. L. 138, 147
Prip–Buus, C. 288, 289, 299, 303
Proia, R. P. 319, 326
Prosser, C. G. 94, 100, 102
Prydz, H. 79, 86
Pujol, M. J. 98, 103
Purdue, P. E. 314, 315, 317–322, 325, 326
Purkiss, P. 309, 310, 322, 324, 327, 324

Quin, P. G. 149, 158
Quinn, J. P. 195, 209

Raben, D. M. 189, 192
Racker, E. 165, 168, 175
Rademaker, B. C. 5, 14, 18, 25, 30
Radke, G. A. 273, 284
Radomski, M. W. 47, 56
Raghaven, D. 218, 223
Raghunathan, G. 123, 128
Rahmatullah, M. 273, 284
Rahmsdorf, H. J. 151, 154, 159, 195, 206–208
Rajput, B. 318, 326
Ram, P. A. 257, 262
Ramaika, C. 152, 159
Ramsay, R. R. 285, 290, 301, 303
Rana, F. R. 124, 128
Rana, R. A. 75, 89–103, 124, 128
Randall, R. J. 37, 55
Randle, P. J. 267, 280, 283
Rapp, S. 107, 110, 115
Rath, E. A. 290, 304
Ratman, M. 3, 11, 14, 17–31
Ratner, S. 322, 327
Raulin, J. 74, 87
Rauscher, F. J. 195, 203, 205–208
Reardon, M. A. 63, 69
Reaven, E. 75, 89
Rechsteiner, M. 250, 254
Reddy, G. P. V. 203, 208
Reed, L. J. 267, 273–277, 283
Reich, E. 318, 326
Reid, K. 292, 304
Reshey, L. 149, 158
Reutter, W. 113–115
Revel, M. O. 50, 56
Rhee, S. G. 177, 187, 190, 192
Riabowol, K. T. 206, 208
Ricard, J. 134, 147
Ricci, D. 75, 76, 86, 89
Richards, J. H. 316, 317, 326
Richert, D. A. 309, 325
Richter, K. 121, 122, 128
Ricquier, D. 159
Riehl, R. 165, 168, 175
Rijksen, G. 5, 14, 17, 18, 20, 21, 23–25, 29, 30
Rimoldi, M. 291, 304
Rindler, M. J. 170, 175
Rittenhouse, S. E. 180, 182, 191
Ritter, J. M. 107, 110, 115
Rixon, R. H. 227, 239
Rizzoli, R. 73–90, 92, 101
Roberts, D. 3, 14
Robins, R. K. 62, 63, 68
Robinson, I. N. 298, 299, 305
Roche, T. E. 273, 284
Rockwell, S. 212, 222
Rodeck, C. H. 313, 325
Rodeman, K. 17–19, 25–27, 29
Roehl, H. H. 24, 253
Rogers, S. 250, 254, 259, 263
Rogers, T. B. 181, 191

Roise, D. 316, 317, 326
Rolles, K. 309, 322, 324, 327
Rose, H. G. 74, 88
Rosebrough, N. J. 37, 55
Rosen, O. M. 283
Rosenberg, M. P. 149, 150, 159, 163, 174
Rosowsky, A. 18, 25, 30
Ross, C. A. 99, 103
Ross, D. A. 60, 68
Rossi, J. J. 195, 196, 198, 200, 205, 207, 208
Rothbert, K. G. 3, 11, 14
Rotheneder, H. 241–254
Rouge, P. 75, 89
Rougraff, P. 267, 269–271, 280, 283
Rowsell, E. V. 313, 315, 325
Roy, A. 149, 151, 154, 158
Rozengurt, E. 92, 101, 164, 171, 174, 175
Rubin, E. H. 227, 239
Ruddle, F. H. 242–244, 247, 253
Rudelstorfer, I. 242–244, 252
Ruff, V. A. 75, 90
Runnerbaum, B. 218, 224
Russell, D. H. 75, 89
Rylatt, D. B. 258, 263
Ryu, S.-H. 177, 187, 190, 192

Sacchi, N. 228, 239
Sagel, J. 50, 56
Saggerson, D. 285–306
Saggerson, E. D. 289, 298, 299, 303
Saiki, R. K. 198, 208
Sailer, M. H. 170, 175
Sala, A. 107, 110, 112, 115
Sale, G. J. 267, 283
Salmons, B. 164, 170, 175
Sambrook, J. 242, 253
Sambucetti, L. C. 195, 208
Sams, E. M. 17, 19, 29
Samuels, L. L. 17, 29
Sanders, D. A. 163, 168, 174
Sanders, J. M. 3, 11, 14
Sandmann, J. 178, 191
Sanford, C. H. 42, 55
Sanger, F. 242, 253, 270, 283
Santavenere, E. 75, 89, 96, 100, 102
Santi, P. 74, 75, 77, 79, 80, 85, 86, 88, 89, 92, 102
Santos, E. 168, 175
Sarji, K. E. 50, 56
Sartorelli, A. C. 62, 63, 68
Sarver, N. 196, 207
Sasson, J. P. 180, 182, 191
Sassone–Corsi, P. 164, 174, 195, 208
Sato, A. 182, 191, 227, 236, 239
Satoh, T. 99, 103, 163, 174
Saudubray, J.-M. 291, 304
Saunders, J. C. 94, 100, 102
Scanlon, K. J. 195–209
Schafer, A. I. 50, 56
Scharf, S. 198, 208
Schatz, G. 316, 317, 326
Schaub, T. 107–110, 112–114
Scheuber, P. H. 107, 109, 110, 115
Schiffer, M. 123, 128, 316, 320, 321, 326
Schilder, R. J. 17, 29, 59, 68
Schlossberg, M. A. 309, 325
Schmid, F. A. 17, 29
Schmidt, F. H. 236, 240
Schneller, S. W. 227, 239
Schönthal, A. 195, 206, 208
Schornagel, J. H. 5, 14, 17–31, 63, 69
Schreyer, A. 113, 114, 115
Schroeder, J. G. 289, 291, 293, 294, 303
Schuetz, E. G. 257, 262
Schuetz, J. D. 17, 21, 29, 30
Schultz, G. 35, 36, 54, 55
Schwartz, M. 217, 218, 223
Scowen, E. F. 309, 324
Sebolt, J. 218, 224
Seelig, S. 258, 262
Seglen, P. O. 145, 148
Seiser, C. 241–254
Selby, P. J. 218, 223
Selikoff, T. J. 218, 223
Sen, A. 294, 305
Severin, S. E. 41, 55
Severina, I. S. 35–56
Sewell, E. T. 279, 281, 284
Sha'afi, R. I. 178, 181, 190
Shafer, J. A. 259, 263
Shakespeare, W. 117, 127
Shapiro, B. H. 256, 262
Sherley, J. L. 248, 254
Shigeta, Y. 289, 299, 303
Shih, C. 24, 31
Shimada, M. 257, 262
Shimomura, Y. 267–284
Shioya, H. 279, 280, 284
Shipman, L. J. 181, 191
Shore, G. C. 316, 326
Shorthouse, A. J. 218, 223, 224
Shug, A. L. 298, 306
Siegel, M. I. 180, 191
Sies, H. 113, 115
Silber, R. 204, 206, 207
Silverstein, L. J. 288, 289, 298, 302
Simmonds, R. J. 63, 69
Simon, R. 211, 217, 221, 222
Simonsen, L. O. 169, 175
Simonsson, B. 241, 252
Simpson, P. 220, 224
Sinnett–Smith, J. 171, 175

Sirotnak, F. M. 5, 8, 14, 17, 20, 21, 24, 26, 28–30
Sisson, J. C. 195, 208
Sitte, H. 78, 86
Skehan, P. 221, 224
Slaughter, C. A. 294, 305
Sletten, K. 79, 86
Smal, J. 259, 263
Small, G. M. 322, 326
Smith, A. K. 12, 15
Smith, C. D. 75, 89
Smith, J. B. 171, 175
Smith, L. H. 309, 322, 324, 327
Smith, M. R. 163, 174
Smith, P. L. 19, 30
Smith, W. C. 258, 263
Smythe, J. F. 218, 223, 224
Snell, K. 313, 315, 325, 326
Snoswell, A. M. 288, 299, 303
Snyder, D. 170, 175
Snyder, S. 100, 103
Soberman, R. J. 108, 115
Sokoloski, J. A. 62, 63, 68
Solski, P. A. 178, 181, 190
Sonenberg, M. 12, 15
Song, M. 74, 87
Soravia, E. 118, 127
Soriano, M. 98, 103
Sowers, L. 195, 200, 205, 208
Sowers, L. C. 195, 199, 208
Sowers, L. V. 203, 204, 206, 208
Spach, G. 123, 128
Spector, A. A. 74, 88
Spielberg, S. P. 262
Spencer, J. H. 117–129
Spiegelman, B. 159
Spiegelman, B. M. 195, 208
Sprangler, M. 74, 82, 86
Spratt, J. S. 218, 223
Spratt, T. L. 218, 223
Squarzoni, S. 73–90
Stacey, D. W. 163, 164, 174, 177, 189, 190
Stakkestad, J. A. 298, 306
Stanley, E. F. 123, 128
Stansfeld, A. G. 309, 324
Starman, R. 124, 129
Starnes, M. C. 206, 209
Staudt, L. M. 195, 209
Stec, J. 100, 103
Steel, G. G. 212, 213, 218, 222–224
Stehlin, J. S. 204, 206, 207
Stein, B. 151, 154, 159, 195, 206, 207
Stein, R. 179, 180, 191
Steinbrecht, R. A. 86
Stenberg, Å. 257, 262
Stephens, D. A. 196, 207
Stephens, L. C. 218, 224
Stephens, T. W. 288, 289, 298, 302, 306
Stepp, L. R. 273–277, 283
Stevens, A. 74, 88
Stewart, C. J. 243, 246, 253
Stewart, T. N. 149, 151, 154, 158
Stokstad, E. L. R. 28
Stokstad, L. R. 309, 324
Storer, A. C. 133, 146, 147
Stradford May, W. S. 96, 102
Stragand, J. J. 218, 224
Strazhevskaya, N. B. 74, 87
Stred, S. E. 259, 263
Ström, A. 255–263
Struchkov, V. A. 74, 87
Stubbart, J. R. 259, 263
Stumpo, D. J. 149, 151, 154, 158
Subramani, S. 315, 326
Suda, T. 41, 55
Sugar, J. 62, 63, 68
Suh, P.-G. 177, 190
Sukhatme, V. P. 149, 158
Sultany, C. M. 124, 128
Suprattapone, S. 99, 103
Sures, I. 121, 122, 128
Suresh, M. R. 17, 29
Susuki, Y. 218, 223
Suzuki, M. 267–284, 289, 299, 303
Svaren, J. 260, 263
Sweet, R. W. 163, 174
Swenson, C. A. 144, 148
Swerdlow, P. S. 17, 21, 30
Sylvia, V. 100, 103
Symons, R. H. 196, 207
Szabo, L. J. 322, 326
Szekeres, T. 57–69
Szelenyi, J. 62, 63, 68

Tachibana, S. 121, 122, 128
Taga, T. 259, 263
Tai, L. R. 259, 263
Takabayashi, Y. 285, 301
Takada, Y. 313, 319–322, 325, 326
Takahara, J. 59, 60, 62, 68
Takahashi, I. 182, 191
Takahashi, M. 182, 191
Takeda, E. 58, 68, 218, 224, 227, 238
Takeda, Y. 314, 325
Takenawa, T. 163, 174
Takimoto, M. 195, 209
Talamantes, F. 258, 263
Talwar, H. S. 75, 90, 96, 102
Tamaoki, T. 182, 191
Tamm, L. K. 316, 326
Tannenbaum, G. S. 256, 262
Tarpley, W. G. 168, 175

Tata, J. R. 74, 87
Taub, R. 149, 151, 154, 158
Taylor, E. C. 24, 31
Taylor, G. W. 107, 110, 112, 115
Taylor, K. M. P. 124, 129
Taylor, D. M. 218, 223
Teicher, B. A. 196, 203, 208
Terrar, D. A. 287, 301
Terry, A. S. 118, 121, 122, 127
Theiler, F. 316, 326
Thelander, L. 227, 236, 239
Thomas, P. 256, 257, 262
Thomas, T. P. 75, 90, 96, 102
Thompson, D. P. 227, 236, 239
Thompson, R. 218, 224
Tilghman, S. M. 149, 158
Tippett, P. S. 134, 147
Tischler, M. E. 281, 284
Tivey, H. 217, 218, 223
Tjian, R. 195, 203, 205, 208
Toback, F. G. 149, 158
Tollet, P. 255–263
Tomec, R. J. 285, 301
Tomich, J. M. 316, 317, 326
Tone, T. 195–209
Topping, D. L. 134, 145, 147, 148, 288, 299, 303
Toussaint, C. 322, 327
Towle, H. C. 258, 262
Travali, S. 243, 253
Tremblay, J. 35, 54
Tricot, G. J. 58, 62–64, 66, 68, 69
Trimble, R. P. 288, 299, 303
Tritton, T. R. 24, 31
Trubiani, O. 75, 89, 96, 100, 102
Trujillo, J. M. 218, 224
Tsai Morris, C. H. 149, 158
Tsai, M.-H. 177, 189, 190
Tsai, S. 36, 55
Tselentis, B. S. 287–289, 302
Tsien, R. W. 164, 174
Tsuji, J. M. 4, 14, 17, 18, 29
Tubiana, M. 217, 218, 223
Tulipano, G. 75, 89
Tupper, J. T. 171, 175
Turner, M. K. 227, 238
Twist, V. W. 287, 301
Tyler, G. 96, 102
Tyminski, H. 294, 304
Tyshchuk, I. A. 36, 38, 43, 51, 55, 56
Tzeng, D. Y. 218, 224

Überall, F. 164, 165, 170–172, 174, 175
Uchida, C. 75, 90
Ueffing, M. 184, 187, 192
Uehara, N. 110, 112, 115
Umeda, P. K. 285, 301
Urrutia, R. 123, 128
Usuda, N. 75, 90

Van Schaftingen, E. 133–148
Van Corven, E. J. 177, 189, 190
Van Beveren, C. 195, 207
Van Doorn, E. 220, 224
Van Moerkerk, H. T. B. 298, 306
Van Daalen Wetters, T. 246, 254
Vandercammen, A. 133–148
Varndell, I. M. 86
Vaughan, M. 36, 55
Vazquez–Padua, M. A. 29, 206
Veall, N. 309, 324
Veerkamp, J. H. 298, 306
Verma, I. M. 164, 174, 195, 207, 208
Vincendon, G. V. 75, 89
Viola Magni, M. P. 74, 76, 86
Viola, M. V. 164, 174
Vitale, M. 74, 82, 87, 88
Vitols, K. S. 3–15, 17, 29, 30
Vlasak, R. 122, 128
Voelkel, N. 107, 110, 112, 115
Vogt, P. K. 195, 208
Völkl, A. 107, 111, 112, 115
Volm, M. 218, 224
Von Heijne, C. 316, 326
Vosatka, R. J. 206, 208
Vuust, J. 122, 128

Wagner, J. R. 178, 191
Wahl, M. I. 187, 192
Wakabayashi, T. 121, 122, 128
Wakelam, M. J. O. 163, 174
Waldegger, L. S. 163–176
Waldegger, S. 164, 165, 168, 175
Walker, D. G. 315, 326
Wall, M. E. 204, 206, 207
Wallin, R. 79, 86
Walser, M. 284
Wang, L. 289, 303
Wang, W. 195–197, 199, 204, 205, 208
Wani, M. C. 204, 206, 207
Ward, K. M. 298, 306
Warenius, H. M. 218, 223
Waters, M. J. 258, 263
Watrin–Granger, P. 258, 263
Watson, S. P. 181, 191
Watson, T. 164, 174
Watts, R. W. E. 309–327
Watts, T. D. 292, 304
Wawra, E. 241, 252
Waxman, D. J. 255–257, 262
Wayes, K. 218, 224

Weakley, L. J. 288, 289, 302
Weber, G. 57–69, 214, 218, 222, 224, 227, 238, 241, 252, 258
Weckbecker, G. 227, 236, 239, 240
Weichselbraun, I. 242, 244, 245, 253
Weill, C. L. 75, 90
Weinberg, R. T. 165, 168, 175
Weinhouse, S. 133, 146, 147
Weinstein, I. B. 179, 180, 184, 187, 191, 192, 289, 299, 303
Weis, B. C. 289, 291, 293, 294, 303, 305
Wells, W. W. 75, 89
Wells, R. 250, 254
Westerfield, W. W. 309, 325
Westerhof, G. R. 17–31
Westerhoff, H. V. 123, 124, 128, 129
Westin, E. H. 17, 21, 29, 30
Westin, S. 261, 263
Westwick, W. J. 311, 324
Wettstein, M. 110, 112, 115
Wheldon, T. E. 217, 218, 223
White, J. C. 17, 23, 28, 30
Whitehead, V. M. 28
Whitehead, M. V. 14
Whitfield, J. F. 227, 239
Wiborg, O. 122, 128
Wickner, W. 74, 88
Widen, S. G. 206, 208
Wiersma–Larsson, E. 256, 262
Wilker, D. 107, 109, 110, 115
Wilkinson, J. 315, 326
Williams, D. H. 118, 121, 122, 127
Williams, F. E. 17–31
Williams, H. E. 309, 324
Williams, R. 107, 110, 112, 115, 309, 322, 324, 327
Williams, R. W. 124, 129
Williamson, J. R. 284
Wilson, P. B. 177, 189, 190
Wilson, S. H. 206, 208
Winter, K. A. 289, 298, 299, 303
Wintersberger, E. 241–254
Wintersberger, U. 252, 254
Wirtz, K. W. A. 75, 89, 92, 102
Wise, P. J. 311, 313, 324, 325
Wishnok, J. S. 36, 54
Wisniewski, L. 218, 223
Wit–Peeters, E. M. 288, 302
Witters, L. A. 287, 292, 302, 304
Wodinsky, I. 3, 14
Woell, E. 163–176
Woeltje, K. F. 289, 291, 293, 294, 303, 305
Woldegiorgis, G. 296, 297, 305
Wolfe, A. 126, 129
Wolfmann, A. 163, 174
Wolin, M. S. 35, 36, 54
Wöll, E. 164, 165, 168, 175
Wood, K. S. 35, 36, 47, 54, 56
Wright, D. G. 62, 63, 68
Wright, D. A. 246, 254
Wright, J. J. 289, 298, 299, 303
Wroblewski, D. H. 24, 31
Wurtman, R. J. 178, 191

Xu, T. 242, 253

Yajima, H. 123, 128
Yamada, K. 182, 191
Yamada, Y. 58, 62–64, 66, 68, 69
Yamaguchi, Y. 216, 222
Yamaji, Y. 58, 62–66, 68, 69
Yamasaki, K. 257, 259, 262, 263
Yamazoe, Y. 257, 262
Yang, C.-H. 5, 8, 14, 17, 20, 26, 28–31
Yasseen, A. A. 251, 254
Yasukawa, K. 259, 263
Yates, D. W. 285, 301
Yeaman, S. J. 267, 269, 273–277, 283
Yeh, D.-B. 242–244, 247, 253
Yoon, J.-B. 258, 262
Yoon, P. S. 36, 54
Yoshida, E. 195–209
Yoshida, Y. 75, 89
Youdale, T. 227, 239
Yu, C.-L. 177, 189, 190
Yuan, G. C. 18, 25, 30
Yue, K. T. N. 285, 301
Yun, Y. 152, 159
Yusa, T. 216, 222

Zaia, J. A. 196, 207
Zammit, V. A. 288, 289, 293, 294, 298–300, 302, 304–306
Zaphiropoulos, P. G. 256, 261–263
Zarbl, H. 168, 175
Zasloff, M. 118, 121–124, 127–129
Zavoico, G. B. 178, 181, 190
Zawadski, J. V. 36, 42, 54
Zerial, A. 74, 88
Zevely, E. M. 3, 8, 9, 14, 17, 21, 23, 28–30
Zhang, B. 267, 269–271, 280, 283
Zhao, S.-Y. 242, 253
Zhao, Y. 267–284
Zhen, Y. S. 63, 69
Zhen, W. 64–66, 69
Ziegler, S. 108, 115
Zielinski, W. J. 118, 127
Zierold, K. 86

Ziff, E. B. 149, 151, 154, 158, 195, 205–208
Zini, N. 73–90
Zöllner, N. 68
Zorgniotti, F. 171, 175
Zwiller, J. 50, 56, 75, 89

SUBJECT INDEX

Acetyl-CoA carboxylase (EC 6.4.1.2)
  in heart muscle 291
    isoform 292
  regulatory role in fatty acid metabolism 285
N-[^{11}C]Acetyl-LTE_4 in studies of leukotriene elimination pathways 107, 108
  metabolic products 110, 111
  time course in rat organs 110, 111
N-[^{3}H]Acetyl-LTE_4
  elimination from blood circulation 109, 110
  β-oxidation product release from hepatocytes 112
β-*N*-Acetylglucosaminidase (NAG, hexosaminidase, EC 3.2.1.52)
  activities in normal and PHI livers 310, 311
  defect in GM2 gangliosidosis 319
Actinomycin D on ribonucleotide reductase mRNA levels 230–232
Acyl-CoA oxidase, rat (EC 1.3.99.3)
  peroxisomal targeting signal 315
Acyl-CoA synthetase (EC 6.2.1.3)
  in fatty acyl-CoA thioester synthesis 285
  in rat heart 291
Adenosine on MTX transport by CEM-7A cells 22, 25, 27
Adenylate cycle, link with guanylate cycle 57, 58
ADP treatment of platelets
  concentration on platelet aggregation 43
    from diabetes patients 51
  on cGMP level 45
  on guanylate cyclase activity 45, 51, 54
Alanine:glyoxylate aminotransferase (AGT,serine:pyruvate aminotransferase, EC 2.6.1.44)
  deficiency in primary hyperoxaluria 309–324
    AGT and GGT activities in hyperoxaluric patients' livers 314
    various enzyme activities in normal and PHI livers 310–313
  human gene
    LAGT-1 genomic clone 318, 323
    mutations leading to mitochondrial targeting 320–323
    nearby genes 317
    structure 318, 319
  in animal species, isomeric forms 313
  in glyoxylate metabolism 313
  peroxisomal location in normal human 314, 315
  peroxisomal or mitochondrial location of AGT 1 in various species 314
    location-related function 315
Alkaline phosphatase, placental (EC 3.1.3.1) proximity to AGT 1 gene 317
Allopurinol
  on plasma hypoxanthine 64, 65
  on plasma uric acid 64, 65
D-Amino acid oxidase, pig (EC 1.4.3.3)
  peroxisomal targeting signal 315
Amino acid residues, mitochondrial membrane targeting sequences 316
  from point mutations in AGT of PHI patients 320–324
  helical wheel demonstration of characteristics 316, 317, 321
*N*α-(4-Amino-4-deoxy-10-methylpteroyl)-*N*α-(4′-azido-5′-iodosalicylyl)-L-lysine
  photoaffinity analog of MTX 18
    accumulation by various CEM cell lines 25
    labeling studies 19
    route of internalization 26
    synthesis 19
AMP deaminase inhibition by GTP 57, 58
Amphipathic α-helices
  formed by frog skin peptides 118, 121, 123, 124
  FT-IR spectroscopy of 124
Antimicrobial peptides from frog skin *see also* individual peptides
  amphipathic structures 118, 121, 123–125
  bombinin 118
  caerulein 118
  gene ancestry 122
  immunohistochemistry 126
  interaction with lipopolysaccharides 124
  levitide 122
  magainin 1 and 2 118
  mammalian counterparts 125
  mechanism of action 123–126

organization of sequences in cDNA 120, 121
PGLa 118
possible biological function 118
precursor pre–pro-protein components 122
signal and antimicrobial sequences 119, 121
thyrotropin-releasing hormone 117
uncoupling of mitochondrial respiration 124
xenopsin 118
xenopsin precurser fragment 118
Aphidicolin on ribonucleotide reductase subunits 233–235, 237, 238
Arabinose-5-P inhibition of glucokinase 143
Arabitol-5-P inhibition of glucokinase 143
Arachidonic acid activation of guanylate cyclase 47
during platelet aggregation 47–49, 54
L-Arginine activation of guanylate cyclase during platelet aggregation 47, 48, 54
L-Arginine-*NO*-synthase in EDRF formation 36
Arylsulphatase (ASA) activities in normal and PHI livers 310, 311
ATP-citrate lyase (EC 4.1.3.8) 288
in heart muscle 291
ATP-dependent leukotriene transport, primary-active 107, 112, 114
inhibition 109
rates for LTC_4, LTD_4, LTE_4 and *N*-acetyl-LTE_4 108, 109
Azidothymidine (AZT)
on A2780 cell lines 204
on cisplatin resistance 204

Bile salt export carrier in hepatocytes 113, 114
Biotin–MTX 7
synthesis 6
Biotin–SS–folate probe 7, 9, 12, 13
synthesis 6
Biotin–SS–MTX folate probe 7, 12, 13
structure 5
synthesis 5, 6
Bombesin
induced changes in membrane potential 166, 168
mitogenic stimulation of 3T3 cells 92–96
synergism with IGF-I 100
on inositol phosphates in 3T3 cells 167
on $^{86}Rb^+$ uptake by 3T3 cells 171
stimulation of [^{3}H]-Tdr incorporation 172
Bombina variegata toxin oligopeptides 117, 118
Bombinin peptide from *B.variegata* 118
analogs 117
Bradykinin
activation of Ca^{2+}-dependent K^+-channels 165
induced changes in membrane potential 166, 168
induced IP_3 signal 166, 167
stimulation of phospholipase C receptors 165
Branched-chain α-ketoacid dehydrogenase (BCKDH) complex (EC 1.2.4.4 + EC no number + EC 1.8.1.4)
assay 269
clofibric acid on 280, 281
E2 stimulation of BCKDH kinase 276, 277
immunoblot analysis 270
phosphorylation and inactivation 267
purification from rat tissues 268, 269
Branched-chain α-ketoacid dehydrogenase kinase (EC 2.7.1.115)
amino acid sequence 278
characteristics of purified 273–278, 282
clofibric acid on 280, 281
link to human myotonic effect 281
cDNA cloning 270, 278, 282
histone phosphorylation 274
inhibition by α-chloroisocaproate 276, 282
inhibition by anti-kinase antibodies 271, 272
inhibition by dichloroacetate 276, 282
inhibition by PDH E2 component 277
isoforms of 279, 282
molecular cloning 278, 279, 282
polymerase chain reaction product 270, 278, 279
purification from rat tissues 271–273
regulation 267
stimulation by BCKDH E2 component 276, 277, 282
substrate specificity towards BCKDH complex 274, 275
Bromodeoxyuridine (BUdR)
antibody 78
labeling of DNA, ultrastructure detection 82

c/EBP differentiation-dependent DNA binding protein
distinction from gC/EBP 156
in GAPDH gene expression 156, 158
gC/EBP detection by gel delay assay 156

c-*fos*
gene
activating stimuli 195
contact point with IREA-BP 155
encoding of Fos nuclear protein 195
exon I 201
expression, CSA on 204
expression in A2780 cells 202
in DNA synthesis 207
overexpression in cisplatin resistance 195, 196, 205
product expression 151
transfection of A2780 cells 198
role in drug resistance 204–206
transcription and translation *in vitro* 152
TRE binding site 154
c-*jun*
gene product p39 linkage to Fos 195
transcription and translation *in vitro* 152
TRE binding site 154
c-*myc* induction by *fos* ribozyme expression 203
Ca^{2+}
channel oscillations, Ha-*ras* induced 165
cytosolic free level in *ras*-transformed cells 165–168
in nucleus of mitogen stimulated cells 98
influx into 3T3 cells, Ha-*ras* on mitogen induced 163–173
inositol phosphates and 165
mitogenic response inhibition by blockade 173
requirement for membrane potential oscillations 168
requirement for PKC 97, 98
Caerulein
peptide from frog skin 118
organization of sequences in cDNA 120, 122
precursor fragment
signal and antimicrobial sequences 119, 121
Camptothecin on A2780 cell lines 204
Carnitine palmitoyltransferases (CPTs, EC 1.3.99.1) regulation 285–301
CPT_1
activity in liver mitochondria, effects of physiological state 288
in acylcarnitine formation 285
inhibition by malonyl-CoA 285, 289, 300
in various tissues 290
molecular weight 294
sensitivity to malonyl-CoA, physiological state on 298–300
separation of catalytic and malonyl-CoA binding entities 294–298
evidence for separate polypeptides 296–298, 301
evidence for topographic separation 295
high affinity sites for malonyl-CoA 295, 296
sub-mitochondrial localization 285, 286, 292–294
tissue-specific isoforms 291
CPT_2
in acylcarnitine catalysis 285
malonyl-CoA sensitivity conferred 297
molecular weight 293, 294
reconstitution with outer membrane 297
sub-mitochondrial localization 285, 286, 292–294
solubilization from inner membrane 293
in liver mitochondria 286
Carnosine (β-alanyl-L-histidine)
interaction with heme 41
on nitroprusside activation of guanylate cyclase 41, 42, 54
Catalase (EC 1.11.1.6) human, peroxisomal targeting signal 315
Cell nucleus
phospholipid localization in 73–85
RNA structures localization 79, 80
Chemotherapy
cisplatin 195–207
considerations for ribonucleotide reductase 236, 237
enzyme-pattern-targeted
inhibition of GPRT 63
tiazofurin–hypoxanthine synergism 63–67
Chicken cytoplasmic thymidine kinase
dispensable termini 251
gene
size 243
transfection of LMTK$^-$ cells 246
Chloramphenicol acetyl transferase (CAT)
assay 152
insulin on 153, 154
phorbol esters on 154
α-Chloroisocaproate inhibition of BCKDH kinase 276
Cholate separation of CPT_2 activity 293, 297
cis-elements of insulin inducibility 154

Cisplatin
cytotoxicity in A2780 cell lines 202
resistance
AZT on 204
CSA on 204
fos gene expression and 195, 196
Clofibric acid
inhibition of BCKDH 279
inhibition of BCKDH kinase 279, 281
on body leucine levels 281
on oxidation of α-keto[1-^{14}C]-isovalerate 281
Colloidal gold conjugation to phospholipases 77, 85
Cycloheximide on ribonucleotide reductase mRNA levels 230–232
Cyclosporin A (CSA) reversal of cisplatin resistance 196, 204
Cysteinyl leukotrienes transport and elimination 107–114
ATP-dependent release 108, 109, 114
elimination from blood circulation 109, 114
export carrier 113, 114
non-invasive analysis 110
oxidation products 112
transport across hepatocyte plasma membrane 112, 113
Cytochrome oxidase (CO, EC 1.9.3.1)
activities in normal and PHI livers 310, 311
Cytochrome P450, P4502C-gene subfamily in rat
CYP2C11 gene product (male specific)
androgen requirement 256
testosterone 16α-hydroxylation catalysis 256
CYP2C12 gene product (female specific)
cis-regulatory sequences for expression 260, 261
estrogens and androgens on expression 257
steroid sulfate 15β-hydroxylation catalysis 256
transcriptional activation by GH 258, 260
inhibition by staurosporin 259
CYP2C12 gene sequencing 260, 261
Cytosine arabinoside (araC) on ribonucleotide reductase mRNA 234, 238

Deoxyadenosine on ribonucleotide reductase subunits 233, 235, 237, 238
2-Deoxysorbitol-6-*P* inhibition of glucokinase 143
Diabetes mellitus, human, platelet sensitivity to ADP 51
Diabetes, rat, on CPT regulation 288, 296, 298–300
Diacylglycerol (DAG)
activation of PKC 177
formation
biphasic nature 189
GH stimulation 259
in PMA-stimulated R6 cells 184, 185
inhibition by PKC inhibitors 187
in thrombin-stimulated platelets
enhancement by PKC inhibitors 182, 183
inhibition by PMA 181
from PA 177
mass determination 180
phosphorylation, non-inhibition by PKC inhibitors 183, 184
second messenger role 178, 189
stimulation of PKC 259
with PS 98, 100
Diacylglycerol (DAG) kinase (EC 2.7.1.107)
inhibitor R59022 183
phosphorylation of DAG 183
Dichloroacetate inhibition PDH kinase and BCKDH kinase 276
Differentiation
induction in HL-60 cells 61, 62
guanosine on 63
IMPDH/GMPR and 63
Dihydrofolate reductase (DHFR, EC 1.5.1.3)
inhibition by MTX 3
inhibitors on MTX transport 24, 27
Dimethylsulfoxide (DMSO) on IMPDH and GMPR activities 62
Dipyridamole synergism with purine biosynthesis inhibitors 63
DNA polymerase β (EC 2.7.7.7)
gene transcription activation by *fos* 195, 200, 203, 205
CSA on 204
fos ribozyme on 203
regulation by Fos 206
DNA polymerase inhibitors on L1210 cell ribonucleotide reductase 233–238
DNA synthesis
onset, correlation with nuclear inositol lipids 94–96
IGFI initiation 100
PKC translocation 98
role of cytoplasmic TK in control 241, 242, 251, 252
cDNA for BCKDH kinase 270
cloning 278, 282

DNAase 1 (EC 3.1.21.1)
hypersensitive sites in TK gene 245
treatment of 3T3 nuclei 242, 243

Early growth response gene (Egr-1)
gene contact point with IREA-BP 155
induction by insulin 151
Endothelium derived relaxing factor, (EDRF) guanylate cyclase stimulation 36
Enzyme targeting
to mitochondria, amphiphilicity of signal sequences 316, 317
to peroxisomes, critical triplet sequence 315
Enzyme trafficking defect
in GM2 gangliosidosis (Tay–Sachs disease) 319
in PHI patients
genomic lesions 319
point mutations associated with mitochondrial AGT 320, 323
in Zellweger's syndrome 319
Epidermal growth factor (EGF) transduction by $p21^{ras}$ 163
Epinephrine triggering of frog skin exudates 118
Ethylenedinitrilo tetraacetic acid (EGTA)
role in nuclear PKC inhibition 99
synchronization of L1210 cells 228

Fasting on CPT regulation in rat liver 288, 296, 298–300
Fatty acid synthesis, regulation in liver 287
Fluorescein–folate treatment of L1210 cells 11
Fluorescein–MTX
synthesis 5
treatment of L1210 cells 11
5-Fluorouracil (5FU) on A2780 cell lines 204
Folate
coenzyme on carrier protein phosphorylation 24
transport proteins
affinity purification 7–10, 13
characterization 10, 11, 13
glycosylphosphatidylinositol linkage 10, 11
in various CEM cell lines 26, 27
interaction of membrane and cytosolic 27, 28
L. casei transporter 2
amino acid composition 9, 10
labeling with biotin probes 7
μM transporter 4, 8, 13
amino acid composition 9, 10
as differentiation marker 12
cell line variations 11
localization 11
proteolytic fragment 8, 10
molecular weights in various cell types 26, 27
nM transporter 4, 13
amino acid composition 9, 10
from various sources 11
glycanase sensitivity 11
L1210 subline 9
localization 11, 12
overexpression 17, 27
use of probes for isolation 12
Folate transport systems in L1210 cells 3–13
5-Formyltetrahydrofolate (folinate)
as folate source for CCRF-CEM cells 18, 20, 27
on MTX transport in CEM-7A cells 21–23
transport 24
in L1210 cells 4
fos ribozyme
cloning into pMAMneo plasmid 200
hammerhead structure 200, 201
on c-*fos* gene expression 202
on gene expression 203, 204
on resistance to antineoplastic agents 204–207
preparation 197, 198
transfection of A2780DDP cells 200
Fructose
metabolism in liver 135
on glucokinase activity 134–136
on glucose phosphorylation 134, 135
physiological significance 145, 146
Fructose 1-phosphate
in glucose metabolism 135
on glucokinase regulatory protein 136–140, 143
compounds with similar action 144
Fructose 6-phosphate
in glucose metabolism 135
on glucokinase regulatory protein 137–140
analogous compounds 143
Furosemide
inhibition of mitogenic stimulation 172, 173
inhibition of *ras*-induced cell volume increase 170
sensitive $Na^+/K^+/2Cl^-$-cotransporter 170, 173

sensitive $^{86}Rb^{+}$ uptake, bombesin stimulation 171

Gene *see* individual genes and oncogenes
Glucokinase (hexokinase IV, EC 2.7.1.1)
acyl-CoAs inhibition 134
competitive inhibition 138–141
gene 134
in liver parenchymal cells 133
in pancreatic β-cells 133, 146
mnemonical model 133, 134
regulatory protein
allosteric nature of inhibition 140–142
discovery 137
mechanism of action 138, 139
model of 139, 140, 142, 143
purification 137, 138
specificity with respect to effectors 143, 144
short-term regulation 133
in isolated hepatocytes 134–136
fructose on 134, 135
fructose 1-phosphate action 136, 137
sigmoidal saturation curve 133
Glucose phosphorylation
fructose on 135
in anesthetized rats 144
in hepatocytes 134, 135, 146
K^{+}-rich medium on 145
scheme 135
Glutamate dehydrogenase (GDH, EC 1.4.1.2) activities in normal and PHI livers 310, 311
Glutamate : glyoxylate aminotransferase (GGT, EC 2.6.1.4)
activities in hyperoxaluric patients 314
activities in normal and PHI livers 312
in glyoxylate metabolism 313
D-Glyceraldehyde
metabolism in liver 135
on glucose phosphorylation in hepatocytes 136, 146
on glucose phosphorylation in islets 146
Glyceraldehyde-3-phosphate dehydrogenase (GAPDH, D-glyceraldehyde-3-phosphate : NAD^{+} oxidoreductase (phosphorylating), EC 1.2.1.12)
gene 149–158
contact point with IREA-BP 155
promoter 150
transcription
cis-acting sequences 152
induction by insulin 150, 152
phorbol ester regulation 150, 152
protein synthesis inhibitors on 157
Glycerophosphate gene, contact point with IREA-BP 155
Glycinamide ribonucleotide transformylase (EC 2.1.2.2) inhibitor 24
Glycine oxidase (D-amino acid oxidase, EC 1.4.3.3) in glyoxylate metabolism 313
Glycollate dehydrogenase (EC 1.1.1.79) in glyoxylate metabolism 313
Glycollate oxidase (L-2 hydroxyacid oxidase, EC 1.1.3.1) in glyoxylate metabolism 313
p-Glycoprotein export carrier in hepatocytes 113
N-Glycosidase F (*N*-glycanase) on folate transport proteins 11
Glyoxylate metabolism
in hyperoxaluric kidney 310, 311
inborn errors 309
main pathways 313
Glyoxylate reductase (D-glycerate dehydrogenase, GR, EC 1.1.1.26)
deficiency in type 2 primary hyperoxaluria 309
in glyoxylate metabolism 313
cGMP
assay 37
biosynthesis 35
in platelets
ADP on 45, 54
antiaggregation effects and 42
possible role in aggregation regulation 49, 54
GMP kinase (EC 2.7.4.4) activity increase in neoplasia 58, 66
GMP reductase (GMPR, EC 1.6.6.8)
activity in differentiation 62, 63
activity in HL-60 cells
DMSO on 62
guanosine on 63
retinoic acid on 61, 62
TPA on 62
activities in rat liver and hepatomas 60
activities in rat tissues 61
in guanylate cycle 57, 58
GMP synthase (EC 6.3.4.1)
activity increase in neoplasia 57, 58, 66
in guanylate cycle 57, 58
Gold, colloidal, conjugation to phospholipases 77, 85
Gompertz equation of growth 211, 212
Growth
parameters, species-dependent 216–220
rate
control in regenerating liver 220
Gompertz equation 211, 212
applied to empirical data 216

parameters for tumors in various species 217
loss, absence of correlation with differentiation 220
Minot's law 211, 220
momentary size awareness 221
regulation of cytoplasmic TK 241
following serum removal or differentiation induction 247, 248
response genes, insulin-stimulated expression 149
species-characteristic weight and time scales 221
Growth hormone (GH)
direct effect on hepatocytes 257
regulation of cytochrome P450 expression 255–261
regulation of steroid metabolism in liver 256
sex-dependent mode of secretion 256, 261
stimulation of DAG formation 259
transcriptional activation of CYP2C12 258, 261
Growth hormone binding protein (GHBP) relationship to GHR 258, 259
Growth hormone receptor (GHR)
possible similarity to IL-6R 259
signalling pathways 258
tyrosine kinase activity 259
GTP biosynthesis regulation 57–67
role in adenylate cycle 57, 58
up-regulation in cancer cells 57, 58, 67
GTPase (EC 3.1.5.1)
activating protein (GAP) binding to $p21^{ras}$ 163
activity of $p21^{ras}$ 163
Guanine phosphoribosyltransferase (GPRT, EC 2.4.2.8)
activity increase in neoplasia 58, 66
competitive inhibition by hypoxanthine 63, 64
inhibition requirement in chemotherapy 63
Guanosine
on IMPDH and GMPR 63
on MTX transport by CEM-7A cells 22
Guanylate
biosynthesis, *de novo* and salvage pathways increase in neoplasia 58, 67
cycle, link with adenylate cycle 57, 58
Guanylate cyclase (EC 4.6.1.2) soluble form 35–54
activation in diabetes patients' platelets 51
activity in myocardial ischemia 52, 53
chromatographic isolation 38, 39
heme deficiency and 38–41
holoenzyme formation 35
nitroprusside activation 38
NO activation 36
platelet aggregation and 42–46
model 49, 50
phosphorylation and 50
reaction catalyzed 35
vasodilators on 36

Hamster
cytoplasmic TK
amino acid sequence 250
gene, nucleotide sequence 243
tumors, Gompertzian growth parameters 217
Heme in guanylate cyclase functioning 35, 36
as endogenous inhibitor 40
deficiency 36
in human platelet 41, 42, 45, 46
in rat platelet 38, 41
Hepatocyte canalicular membrane
bile salt export carrier 113
leukotriene transport across 110–113
multidrug export carrier 113
Hexokinases (EC 2.7.1.1)
affinity for glucose 133
ancestral gene 134
Histone H1 substrate for PKC 97, 99
Histones phosphorylation
by BCKDH kinase 274
by PDH kinase 274
Hormonal regulation
of hepatic cytochrome P450 enzymes 255–257
of liver metabolism, sexual dimorphism 255–261
Human
colon cancer HT-29 cells, tiazofurin/hypoxanthine synergistic cytotoxicity 66
cytoplasmic thymidine kinase
amino acid sequence 250
gene
nucleotide sequence 244
size 243
protein stability control 248
regulation during cell cycle 248
transcriptional control 243
HeLa cells, nuclear phospholipid changes during cell cycle 82
leukemia, tiazofurin combination chemotherapy 64, 65
leukemia CCRF-CEM cells
accumulation of MTX photoprobe by 25, 26

folate transport systems 5
MTX transport 17–28
kinetic properties 20
leukemia CCRF-CEM-7A cells
accumulation of MTX photoprobe by 25, 26
derivation from CEM cell line 18
MTX transport
down-regulation by adenosine 22
down-regulation by reduced folates 21, 22, 27
kinetics 20
leukemia CEM/MTX cells 18, 19
accumulation of MTX photoprobe by 25, 26
leukemia HL-60 cells
IMPDH and GMPR activities
DMSO on 62
guanosine on 63
retinoic acid on 61, 62
TPA on 62
tiazofurin/hypoxanthine synergistic cytotoxicity 65
mesotheliomas
comparison of xenografts with original tumors 219
in nude mice, growth decay–enzyme correlation 216
metallothionein II-A (hMTII-A) gene expression
c-*fos* stimulation 200, 203, 205
fos ribozyme on 203
in drug resistance 205
myotonia associated with clofibrate treatment 279
possible involvement of BCKDH kinase 268, 279, 281, 282
ovarian carcinoma A2780 cell lines
A2780DDP transfection with c-*fos* plasmid 198, 200
fos activity in 201
c-*fos* gene expression in 202
cisplatin cytotoxicity in 202, 203, 205
induction of cisplatin-resistant line A2780DDP 197
sensitivity to antineoplastic agents 203, 204
transformants, morphological changes 202, 203
ovarian carcinoma OVCAR-5 cells
origin 59
tiazofurin/hypoxanthine synergistic cytotoxicity 66
platelets
aggregation
ADP concentration on 43
assay 37
guanylate cyclase activation during 48
guanylate cyclase and 42–46, 49, 50
in diabetes mellitus patients 51
inhibition by nitroprusside 46, 47
model for regulation 49
pathological increases 50
guanylate cyclase
heme deficient 41, 42, 53
nitroprusside activation and 46
inhibition 39
nitroprusside activation 39
carnosine inhibition of 41, 42
separation 38, 39
supernatant, chromatography 38, 39, 53
thrombin stimulated
aggregation 181
DAG formation 178, 180, 181
enhancement by PKC inhibitors 182
inhibition by PMA 181
$InsP_3$ production 180
PKC activation 181
preparation 179
second messenger control 184, 188, 189
serotonin secretion 181
primary hyperoxaluria
type 1 (PHI)
AGT deficiency 309–324
clinical treatment 309, 310, 322, 323
genetic heterogeneity 311, 323
genomic lesions in patients 319, 320
site of metabolic lesion 313
type II (PHII) GR deficiency in 309
primary liver cancer, sexual difference in frequency 255
tissues, reactivity to polyclonal magainin-2 antibody 125, 126
tumor xenografts, Gompertzian growth parameters 217
host's species determination 221, 222
tumors
doubling times compared to xenografts 218, 219
Gompertzian growth parameters 217
Hydratase : dehydrogenase, rat (EC no number)
destruction by terminal sequence mutation 315
peroxisomal targeting signal 315

Hydroxyurea (HU)
on ribonucleotide reductase subunits 233, 235, 238
-resistant L1210 HU-7 cells 227
mRNA of ribonucleotide NHI subunit 233, 234
Hypoxanthine
competitive inhibition of GPRT 63
human plasma levels 64, 65
inhibition of guanine salvage 64, 65
synergism with tiazofurin in HL-60 cells 65

IMP utilization, metabolic pathways 58
IMP dehydrogenase (IMPDH, EC 1.1.1.205)
activity
in differentiation 62, 63
in HL-60 cells
DMSO on 62
guanosine on 63
retinoic acid on 61
TPA on 62
increase in neoplasia 57, 66
activities in rat liver and hepatomas 60
in guanylate cycle 57, 58
inhibition by tiazofurin 67
IMPY (2,3-dihydro-1h-imidazo (1,2-b)pyrazole) on NHI ribonuclease reductase subunits 231, 233, 238
comparison of wild type and HU-resistant L1210 233, 234, 237
Inositol lipids of nucleus
changes with neoplasia 92
correlation with DNA synthesis onset 94, 95
metabolism 75, 76, 99–101
phosphorylation changes at differentiation 83, 92
phosphorylation changes with mitogenesis 83, 93
site of phosphorylation 92
Inositol phosphate
analysis 180
response to α-thrombin 187
PKC-β overexpression on 187
Inositol phospholipids
breakdown, PKC inhibition of 178
nuclear metabolism 75, 76
relation to mitogenesis and differentiation 83, 92, 93
signal transduction and 83
Inositol-1,3,4,5-tetrakisphosphate (IP_4) level in 3T3 cells Ha-*ras* on 165–167
Inositol-1,4,5-triphosphate (IP_3)
as second messenger 91, 92, 97, 99, 177, 178, 189
formation
in thrombin stimulated platelets 180
phospholipase C stimulation and 165
Ha-*ras* on 166, 167
receptors at nuclear envelope 99
stimulation of PKC 98, 99
Insulin
GAPDH stimulation 152
induction of metabolic gene transcription 150, 157
on HGPDH-CAT 153
nucleotide deletion on 153
sensitive genes, contact points of IRE-BP 155
transcriptional activation response mechanism 157
Insulin-like growth factor IGF-I
growth-promoting effect, sequence 100
induction of DNA synthesis 100, 101
mitogenic stimulation 82, 92, 93, 100
mode of action 94
receptor expression in responsive and unresponsive cells 94, 95, 100, 101
Insulin response elements (IRE)
A
binding protein (IREA-BP) 154, 158
contact points in insulin-sensitive genes 155
mRNA regulation 155
site 150, 158
B
detection 156
protein complex 157
similarity to IRE-A 156
site 150
stimulation on differentiation 157
binding proteins 151
independence of A and B 152
phorbol stimulation 151
Interleukin-6 receptor (IL-6R) possible similarity to GHR 259

K^+
channels, CA^{2+} dependent
bradykinin activation 165
Ha-*ras* on 165
in mitogenic response 173
concentration on glucokinase activity 145
flux Ha-*ras* on mitogen induced 163–173

Lactate dehydrogenase (EC 1.1.1.27) in glyoxylate metabolism 313

Lactobacillus casei folate transport protein 3
amino acid composition 9, 10
Leukotriene C_4 (LTC_4)
ATP-dependent
export carrier 107–109, 112, 113
release from leukotriene-synthesizing cells 108, 109
biosynthesis 109
Leukotriene C_4 synthase in LTC_4 metabolism 109
Levitide from frog skin 122
organization of sequences in cDNA 120, 121
precursor fragment, signal and antimicrobial sequences 119, 121
5-Lipoxygenase (EC 1.13.11.12) in LTC_4 metabolism 109

Magainin 1 and 2, peptides from frog skin 118
anion channel formation 123, 126
α-helix 123, 124
on lipopolysaccharides 124
on mitochondrial metabolism 123, 124
organization of sequences in cDNA 120
polyclonal antibody, human tissue reactivity 125, 126
signal and antimicrobial sequences 119, 121
Malonyl-CoA
binding entity on CPT_I 295, 300
hepatic fatty acid metabolism control and 285, 287, 298
inhibition of
CPT_I 285, 289
in various tissues 290, 295
of inner and outer mitochondrial membrane CPTs 293
metabolism
in cardiac myocytes 291, 292
use of fatty acid elongation system 292
in heart muscle 291
possible sequestration 290
sensitivity of
liver CPT_I, physiological state on 298–300
reconstituted CPT_2 297, 298
Mannitol-l-P inhibition of glucokinase 143
Methotrexate (MTX)
biotin derivatives (biotin–SS–MTX)
isomerism 6
structure 5
synthesis 5, 6
chemotherapy, transport importance 3
on A2780 cell lines 204
photoaffinity analog APA-[^{125}I]-ASA-Lys 18, 19
accumulation by CEM cell lines 25, 26
transport
by CEM cells 19–21
by CEM-7A cells 19–25
5-formyl-THF on 21–24
5-methyl-THF on 21
MTX on 23, 24
TMQ on 23, 24
carrier protein 26
characteristic 17
in L1210 cells 4
5-Methyltetrahydrofolate
on MTX transport in CEM-7A cells 21, 24
transport in L1210 cells 4
Mitochondria
enzyme targeting to 316, 317
AGT of PHI patients 319, 320
peptide signal sequences 316
amino acid helical wheel 316, 317
ampiphilicity of 316
mode of action 317
isolation from rat tissues 287
localization of CPTs in 285, 286, 292–294
Mitochondrial
protein kinases 267–282
thymidine kinase 241, 251
Mitogenic
signaling systems 163, 164, 171–173
stimulation of 3T3 cells
sequence of events 91, 92
with IGF-I and bombesin 82, 92
DNA synthesis 93
nuclear polyphosphoinositide phosphorylation 94–96
PKC translocation 98
responsive and unresponsive cells 93–95
Monoamine oxidase (MAO, EC 1.4.3.4)
activities in normal and PHI livers 310, 311
Mouse
cytoplasmic thymidine kinase
amino acid sequence 250
gene
control regions 245
nucleotide sequence 244
promoter activity 243–246
footprint studies 245
protected regions 245, 246
-pseudogene comparison 248
size 243

transcription stimulation region 245
truncated, growth regulation 249, 250
embryonal carcinoma F9 cells, TK activity loss at differentiation 247
erythroleukemia, Friend, cells
cryosubstitution 78
differentiation, on nuclear phospholipids 82, 92
phospholipid localization 76
fibroblast 3T3 cells
cell volume changes after oncogene induction 169
Ha-*ras* transfection 164
K^+ channels, CA^{2+} dependent, activation by Ha-*ras* 165
membrane potential 164
oscillations in transformed cells 165
bombesin induced 166, 168
bradykinin induced 165, 166, 168
mitogenic stimulation 82, 91–101
BUdR incorporation after 93
nuclear phosphorylation patterns 94–96
PKC activity in isolated nuclei 99
PKC translocation and 98
responsive and unresponsive cells 93–96
nuclear phospholipids during growth 82
nuclei, DNAase treatment 242
TK gene promoter region analysis 245
fibroblast 3T3-L1 cells
GAPDH induction by insulin 150, 152
C/EBP on 156
c-*fos* expression 151
Egr-1 induction 151
IREs on 154, 156, 157
gC/EBP induction during differentiation 156
insulin on gTRE binding during differentiation 156
fibroblast 3T6 cells TK studies 242
L cells, TK activity regulation 248–250
$LMTK^-$ cells transfection
with chicken TK gene 246
with pseudogene 248–250
with truncated gene 249, 250
leukemia L1210 cells
cell cycle analysis 229, 236, 237
deoxyadenosine resistant 227
folate transport systems 4, 13
hydroxyurea resistant cross-resistance to IMPY 227
ribonucleotide reductase of 227, 233
MTX transport 3
pathway 25
nM folate transporter subline JF 9, 13
ribonucleotide reductase mRNA subunits 227–238
synergistic action on 236
synchronization with EGTA 228, 230
mastocytoma L 138C-10a cells plasma membrane vesicles, ATP-dependent transport of leukotrienes 108, 109, 114
tumors
correlation of TK with growth rates 219
Gompertzian growth parameters 217
implant growth rate, dependence on size 213
Multidrug export carrier in hepatocytes 113, 114

Neoplastic transformation, cell recognition and 221
Nitric oxide (NO) free radical group activation of guanylate cyclase 36, 41, 42
Nitroblue tetrazolium (NBT) assay for functional differentiation 59
HL-60 cells 62
Nitroprusside (sodium)
activation of guanylate cyclase 38
carnosine inhibition of 41
during platelet aggregation 47, 48, 54
heme deficiency on 46
in diabetic patients' platelets 51
mode of action 41
platelet aggregation on 43–45
inhibition of platelet aggregation 46
Nuclear phospholipids
-BUdR double labeling 82
detection by enzyme–gold technique 76, 77
in membrane bilayers 84, 85
influence on nuclear structure and function 73, 74
ribonucleoprotein association 81, 84
variation during cell cycle 82–84
Nuclear signaling systems
imbalance in unresponsive cells 100
polyphosphoinositides 99
Nucleosidediphosphate kinase (EC 2.7.4.6) activity increase in neoplasia 58, 66

N-Octylglucoside solubilization of CPT activity 293, 297

Oligonucleotides, synthetic, preparation 197
Oncogene (*see also* individual elements) formation by *ras*-gene mutation 163
Ornithine decarboxylase (ODC, EC 4.1.1.17) gene contact point with IREA-BP 155
Oxalosis in human PHI 309
2-Oxoglutarate dehydrogenase (EC 1.2.4.2) complex 309
2-Oxoglutarate : glyoxylate carboligase (CL, EC no number)
  activities in normal and PHI livers 310, 311
  supposed involvement in human PHI 309, 310, 323

P333 gene contact point with IREA-BP 155
Peptides *see* Antimicrobial peptides from frog skin
Peroxisomes, enzyme targeting to 315, 316
  critical triplet sequence 315
PGLa peptide from frog skin 118
  α-helical structures 124
  organization of sequences in cDNA 120
  signal and antimicrobial sequences 119, 121
Phorbol esters (phorbol-12-myristate-13-acetate, PMA)
  inhibition of DAG formation in platelets 181
  mitogenic response of R6 cells 187, 188
  on HGAPDH-CAT 153
  on PKC 177, 178
  regulation of GAPDH gene 150, 152, 153
Phosphatidic acid (PA)
  formation from PC 177
  second messenger role 177, 189
Phosphatidic acid phosphohydrolase (EC 3.1.3.4)
  DAG formation by PA hydrolysis 177, 178, 189, 190
  inhibition on DAG formation 186
Phosphatidylcholine (PC) turnover pathways 177, 178
Phosphatidylethanol marker for PC-PLD activation 185, 186
Phosphatidylinositol in nucleus 75
Phosphatidylserine with DAG, stimulation of PKC 98
Phosphoenolpyruvate carboxykinase (GTP) (PEPCK, EC 4.1.1.32) role of insulin and 149
Phospholipase A2 (EC 3.1.1.4)
  conjugation to colloidal gold 77
    label distribution in resting and cycling cells 83
  hydrolysis of PC 177
Phospholipase C (EC 3.1.4.3)
  activity in regenerating rat liver 84
  conjugation to colloidal gold 77
  digestion of nuclear matrices 77
  effects of digestion on nuclear components 79
  hydrolysis of inositol phospholipids 177, 178
  in LTC_4 metabolism 109
  in platelet aggregation model 49
  inhibition by neomycin 184
  inhibition by PKC 184
  opposing regulation of PC-PLD 188
  role in initiating DNA synthesis 95, 100
Phospholipase D (PC-PLD, EC 3.1.4.4)
  activity in R6 cells 184
    enhancement by PKC overexpression 186, 187, 190
    enhancement correlation with mitogenesis 187, 190
    inhibition by PKC inhibitors 187
  assay 180
  contrast with PI-PLC regulation 188
  PC metabolism by 177, 178
Phospholipase regulation by PKC 177–190
Phospholipids
  in platelet aggregation model 49, 50
  localization in cell nucleus 73–85
    autoradiographic methods 76
    cytochemical methods 76
    evidence for 73, 74
    fixation methods 80, 81, 85
    interchromatin distribution 81, 84
    phospholipase–gold labeling 79–81, 84
Phosphoribosyltransferase gene contact point with IREA-BP 154, 155
Phosphoserine phosphatase (EC 3.2.3.3) concentration, inverse correlation with rat tumor 5A doubling time 215
Plasmid pMAMneo
  construction 197, 198
  *fos*R cloning 200
Polyphosphoinositides in nuclei
  link to IGF-I receptor 96, 100
  phosphorylation after mitogenic stimulation 94
    responsive 3T3 cells 95, 101
    unresponsive 3T3 cells 96, 101
  signaling system 99, 101
Positron emission tomography with leukotrienes 107, 108, 110, 111

Protein Fos
  levels in A2780 cell lines 202
  properties 195
  targets against drug resistance 205, 206
Protein kinase C (PKC, EC 2.7.1.37)
  activation in thrombin stimulated platelets 181
  activity after mitogenic stimulation of 3T3 cells 97, 100
  as second messenger target 97
  DAG and PS stimulation 98
  down-regulation 178
  family, feedforward and feedback roles 177, 189
  histone H1 substrate 97
  in platelet aggregation model 49, 50
  in stimulated Rb^+ uptake by cells 172
  IP_3 stimulation 98–100
    EGTA on 99
    sphingosine on 99
  isozyme β1 overexpression 178
    on inositol phosphate response 187
    PMA-stimulated DAG formation and 184–186
  location before mitogenic stimulation 98
  negative feedback mechanism in platelets 184
  permissive role in GH signaling 259, 261
  phosphorylation in nucleus 75
    second messenger generation and 75, 83
  regulation of second messengers 178, 188, 189
  synthetic polyclonal antibody 98
  translocation to nucleus 97–101
Protein kinase C inhibitor K252a
  inhibition of DAG formation in R6 cells 187
  potentiation of DAG formation in platelets 182
Protein $p21^{ras}$
  accumulation in dexamethasone-treated, transfected cells 170
  GAP regulation of Ca^{2+} channels 169
  GTPase activity 163
Protein regulator of glucokinase 133–146
  binding site 142
  discovery 137
  in pancreatic islets 146
  kinetics of effector interaction 142, 143
  mechanism of action 138, 139, 146
    allosteric nature of 140–142
    model 139, 140
  purification 137, 138
  specificity with respect to effectors 143, 144
Protoporphyrin IX activation of guanylate cyclase 35, 47
  during platelet aggregation 47, 48, 54
  in diabetic patients' platelets 51
Pyruvate dehydrogenase (PDH) complex (EC 1.2.4.1 + EC 2.3.1.12 + EC 1.8.1.4)
  assay 269
  E2 stimulation of kinase 276, 277
  phosphorylation sites inactivated by kinase 267
  purification from rat tissues 268, 269
Pyruvate dehydrogenase kinase (EC 2.7.1.99)
  characteristics of purified 274–278, 282
  chymotrypsin on 275, 282
  general properties 267
  histone phosphorylation 274
  inhibition by BCKDH E2 component 277
  purification from rat tissues 271–273
  stimulation by PDH E2 component 276, 277
  substrate specificity towards PDH complex 274, 275
  trypsin on 275

ras Genes
  general properties 163, 164
  Ha-*ras* oncogene
    enhancement of induced activation of Ca^{2+} and K^+ fluxes 163–173
    properties induced by transformation 163
    stimulation of [^{3}H]-Tdr incorporation 172
    transfection of 3T3 cells 164
      induction of membrane-potential oscillations 165
      on furosemide-sensitive $^{86}Rb^+$ uptake 169
      on K^+-influx 169–173
Rat
  brown fat CPT_1 sensitivity to malonyl-CoA 290
  cardiac myocytes, malonyl-CoA metabolism 291, 292
    fatty acid elongation system 292
  dwarf (NIMR/AS), isolated GH deficiency 256
    normal sex-linked mode of GH secretion 256, 257
  fibroblast R6 cell lines
    C1 (lacing RKC cDNA insert) culture and labeling 179, 180

PMA stimulation of DAG formation 184, 185
PKC3
culture and labeling 179, 180
enhanced mitogenic response 187–189
PKC-β1 isozyme overexpression 184
PMA stimulation of DAG formation 184, 185
transformation susceptibility 184
heart
CPT_1 sensitivity to malonyl-CoA 290
dehydrogenase complexes, isolation from 268
dehydrogenase kinases, isolation from 271–273
guanylate cyclase activity in myocardial ischemia 52–54
malonyl-CoA metabolism in 291
hepatocytes
clofibrate treatment 271
on α-keto[1-^{14}C] isovalerate 281
P4502C12 mRNA
estrogens and androgens on expression 257
GH induction in male and female cells 260
hepatoma
5123, IMPDH and GMPR activities 60
7288, IMPDH and GMPR activities 60
7787, IMPDH and GMPR activities 60
9618A, IMPDH and GMPR activities 60
H35 cell line
enzymes expression 152
insulin stimulation on GAPDH 152
IREs on 156, 157
liver
clofibrate treatment
on BCKDH 280
on BCKDH kinase 280
with low protein diet 280
cytochrome P450 expression 255–261
glucokinase
fructose on 135
genes 134
IMPDH and GMPR activities 60
mitochondrial CPT_1 activities
fetal to neonatal transition on 288, 289, 299
inactivation by detergents 293
malonyl-CoA binding sites 295, 296
outer and inner membrane comparison 293
physiological state and 288, 289, 298–300
nuclei
colloidal gold labeling 77, 78
matrix purification 77
phospholipids localization 79, 81
RNA of 79, 80
mammary carcinoma 5A (= DMBA 256)
decrease in TK with time 214
increase in volume doubling time with time 214
volume growth rates 212, 213
mammary squamous cell carcinoma 3M2N enzyme level variations with time 215
pancreas
colloidal-gold labeling 77
fracture-labeling 78
nuclear RNA of 79, 80
phospholipid localization 81
platelets
guanylate cyclase 38
heme deficiency 39–41, 53
in myocardial ischemia 52–54
supernatant, chromatography 38, 39, 53
regenerating BUdR-phospholipid double labeling 82, 83
skeletal muscle CPT_1 sensitivity to malonyl-CoA 290
tissues of different renewal capacities, IMPDH and GMPR activities 61
transport mutant with deficient leukotriene excretion 110
N-acetyl-LTE_4 metabolite studies 111
absence of export carrier 113
β-oxidation products from hepatocytes 111, 112
tumors
correlation of TK with growth rates 219
Gompertzian growth parameters 217
$^{86}Rb^+$ uptake by cells
after Ha-*ras* induction 169–171
bombesin stimulation 171
Reciprocal regulation of IMPDH and GMPR 62
Retinoic acid on IMPDH and GMPR activities 61, 62
Ribonuclease A (EC 3.1.27.5), colloidal-gold complex 77
labeling of rat liver nuclei 79, 80

Ribonucleoproteins, nuclear phospholipid association 81, 84, 85
Ribonucleotide reductase (EC 1.17.4.1)
activity increase in neoplasia 58
chemotherapy considerations 236, 237
effector-binding (EB) subunit
dATP inhibition 227
cDNA probe (M1) 229
dGTP inhibition 227
mRNA half-life 230, 231, 237
mRNA levels
actinomycin on 230–232
aphidicolin on 233, 235, 237
araC on 234, 237
cycloheximide on 230–232
deoxyadenosine on 233, 235, 237
hydroxyurea on 233, 235, 237
IMPY suppression 231, 233
non-heme iron (NHI) subunit
cDNA problem (M2) 229
hydroxyurea inhibition 227
IMPY inhibition 227
MAIQ inhibition 227
mRNA half-life 230, 237
reduction in S phase 230, 231, 236
mRNA levels
actinomycin on 230–232
aphidicolin on 233, 235, 237
araC on 234, 237
cycloheximide on 230–232
deoxyadenosine on 233, 235, 237
hydroxyurea on 233, 235
IMPY stimulation 231, 233, 237
comparison of wild type and HU resistant 233, 234
protein synthesis requirement 236
subunits, genetically independent origin 227, 236, 238
RNA, nuclear distribution 79, 80
mRNA of ribonucleotide reductase subunits (EB and NHI) half-lives 230
comparison of G_0/G_1 phase with S phase 230, 231

Second messengers
CA^{2+} 91
DAG 91, 97
inositol phosphates 91, 97, 99
regulation
in fibroblast sustained signaling system 178, 184–190
in platelet rapid response system 178, 182–184, 188–190
PKC and 178, 188–190
Serine : pyruvate aminotransferase (SPT, EC 2.6.1.51) identity with AGT 314
Serotonin release
from thrombin-stimulated platelets 181
PKC inhibitors on 183
Sorbitol on glucose phosphorylation 134, 136, 146
Sorbitol 6-phosphate
binding to glucokinase regulatory protein 139, 140, 146
inhibition of glucokinase 141
compounds with similar action 143
kinetics of 142, 143
Sphingosine
inhibition of PKC 99
potentiation of thrombin-induced DAG formation 183
Staurosporine (PKC inhibitor)
inhibition of DAG formation in R6 cells 187
potentiation of DAG formation in platelets 182

12-*O*-Tetradecanoylphorbol 13-acetate (TPA) on IMPDH and GMPR activities 62
Thymidine on MTX transport by CEM-7A cells 22
Thymidylate kinase (TK, EC 2.7.1.21)
activity during cell cycle 241, 247
activity increase at G_1/S border 242, 251
as marker of neoplastic transformation 241
concentration
correlation with growth rates in normal fetal and tumor tissue 219, 220
in rat 5A cells with time 214
inverse correlation with tumor doubling time 215, 216
mesotheliomas compared to their xenografts 219
control at mRNA translation level 247
degradation at mitosis 248, 251
DNA precurser pool, regulation function 251
gene
nucleotide sequences for various species 243
promoters, species comparison 243–245
protected sequences 245, 246
size 243
transcription stimulation region 245

multi-level regulation of 251
post-transcriptional regulation 246–251
protein stability 248, 250
regulation of cytoplasmic 241–252
TK⁻ mutants in cell cultures 241
transcriptional regulation 243–246
widespread occurrence 251
Tiazofurin (TR, 2-β-D-ribofuranosylthiazole-4-carboxamide, NSC 286193) synergism with hypoxanthine
clinical requirements 65
in HL-60 cells 65
in HT-29 cells 66
in OVCAR-5 cells 66
dTMP synthase (EC 2.1.1.45)
gene transcription activation by *fos* 195, 200, 203, 205
CSA on 204
fos ribozyme on 203
inhibitor 24
Topoisomerase I (EC 5.99.1.2) gene transcription activation by *fos* 195, 200, 203
fos ribozyme on 203
TRE consensus motif 151, 154
gTRE
identification 154
on CAT gene expression 154
site on GAPDH gene 150
binding of c-*fos*/c-*jun* 151, 154
Trimetrexate (TMQ) on MTX transport on CEM-7A cells 23, 24
Tumor growth
fit to Gompertz equation 221
heterotransplantation on 218, 220
limitation and tumor burden 212, 213
inadequacy of explanation 213
nutrient and oxygen accessibility 213, 214
possible other factors 216
species differences 216
Tyrosine kinase receptor for IGF-I, link to nuclear polyphosphoinositides 96, 100, 101

Uridine kinase (EC 2.7.1.48)
concentration, inverse correlation with 3M2N tumor doubling time 215

Xenopsin, peptide from frog skin 118
organization of sequences in cDNA 120
Xenopsin precursor fragment 118
α-helical structures 124
signal and antimicrobial sequences 119, 121
Xenopus laevis antimicrobial peptides 117–126